



FRIDAY, AUGUST 19.

Train Accidents in July.

The following accidents are included in our record for the month of July:

REAR COLLISIONS.

Very early on the morning of the 21 a long coal train was pulling across both tracks of the New York, Lake Erie & Western road at Lanesboro Bridge, Pa., to get to the Carbondale Branch track, when an east-bound freight train came up and struck the cars on that track, wrecking several. Almost at the same moment a west-bound freight came up and struck the cars on that track also, making a very complicated wreck. Two engines and 90 cars were badly broken.

On the 6th a passenger train on the Union Pacific road ran into the rear of a freight in Lawrence, Kan., wrecking several cars, killing one man and injuring two others who were in the caboose.

On the afternoon of the 8th a log train on the Flint & Pere Marquette road ran into a preceding freight near Freeland, Mich., wrecking several cars and injuring the conductor.

On the afternoon of the 11th a passenger train on the Sullivan County road ran over a misplaced switch and into a freight train standing on a siding at North Charlestown, N. H., damaging the engine.

On the 12th a yard engine on the Philadelphia & Reading road ran into a coal train in Philadelphia, Pa., wrecking several cars.

On the night of the 12th a freight train on the Michigan Central road broke in two near Lawton, Mich., and the rear cars afterwards ran into the forward ones, wrecking several cars and blocking the road all night.

On the afternoon of the 14th a freight train on the Chicago, Burlington & Quincy road ran over a misplaced switch and into the rear of another freight standing on a siding at Malden, Ill. The engine and several cars were wrecked.

On the morning of the 16th a freight train on the Central Railroad of New Jersey, broke in two near North Branch, N. J., and the rear section ran into the forward one, wrecking several cars.

On the morning of the 16th a wild engine on the Lehigh Valley road ran into the rear of a freight train on the long bridge at White Haven, Pa., wrecking several cars. Two trainmen were hurt.

On the night of the 20th a yard engine on the Louisville & Nashville road ran into the rear of a freight train in Nashville, Tenn., wrecking a car and killing a man who was stealing a ride.

On the afternoon of the 21st a freight train on the Philadelphia, Wilmington & Baltimore road ran into the rear of a repair train at Elkton, Md., wrecking several cars, injuring a laborer and two tramps.

On the morning of the 23d a freight train on the Pennsylvania Railroad broke in two near Cambria, Pa., and the rear section ran into the forward one, wrecking several cars.

On the morning of the 24th a freight train on the Buffalo, New York & Philadelphia road ran into the rear of a preceding freight at Franklinville, N. Y., in a heavy fog, wrecking several cars.

On the morning of the 24th a freight train on the New York, Lake Erie & Western road ran into a preceding freight near Andover, N. Y., damaging the engine and several cars.

Very early on the morning of the 25th a freight train on the Pennsylvania Railroad broke in two near Rahway, N. J., and the rear cars afterwards ran into the forward ones, wrecking several cars and blocking the road four hours.

On the morning of the 25th a passenger train on the Pennsylvania Railroad ran into the rear of a freight train near Menlo Park, N. J., wrecking two cars.

On the afternoon of the 25th a repair train on the Pittsburgh, Cincinnati & St. Louis road ran into the rear of a freight train near Greenville, O., damaging several cars.

On the afternoon of the 27th a freight train on the Pennsylvania Railroad ran into the rear of a preceding freight which had stopped at Mapleton, Pa., for water, damaging the engine and several cars and blocking the road five hours. The first train sent back a flag, but a driving rain prevented it from being seen.

On the afternoon of the 28th a freight train on the New York, Lake Erie & Western road ran into some passenger cars which were being switched across the track in Paterson, N. J. The engine and a passenger car were damaged.

On the afternoon of the 29th a freight train on the New York, New Haven & Hartford road ran into a wrecking train which was standing on the main track at Portchester, N. Y., damaging an engine and several cars.

Very early on the morning of the 30th a freight train on the New York, New Haven & Hartford road ran into the rear of another freight train which was standing on the main track near Harlem River, N. Y., wrecking several cars and injuring one man.

On the morning of the 30th a passenger train on the Boston, Hoosac Tunnel & Western road ran into the rear of a freight train which was going into a siding at Hoosick Falls, N. Y., damaging several cars.

BUTTING COLLISIONS.

On the afternoon of the 4th there was a butting collision between a passenger train on the Kentucky Central road and an empty excursion train running backwards, near Versailles, Ky. Several cars were wrecked, and engine badly damaged, seven persons killed and 12 hurt. The excursion train had orders to take a siding below where the collision happened, but did not obey them.

About noon on the 5th there was a butting collision between two freight trains on the Old Colony road, near Brockton, Mass., wrecking both engines and several cars. It is said that one train had received orders where to meet the other, but did not obey.

On the morning of the 10th a freight train on the Chicago, St. Paul, Minneapolis & Omaha road broke in two near Hudson, Wis., and the detached cars ran back down the grade at a great speed and into the head of a following freight. The engine and several cars were wrecked and the engineer killed.

On the morning of the 12th there was a butting collision between two freight trains on the Chicago & Northwestern road near Ishpeming, Mich., doing much damage.

On the evening of the 15th there was a butting collision between a repair train and a freight train on the Central Pacific, near Blue Cañon, Cal. Both engines and several cars were wrecked, three Chinese laborers killed and seven hurt.

About noon on the 19th there was a butting collision be-

tween two Fitchburg Railroad passenger trains on the Troy & Greenfield road near Zoar, Mass. Both engines and both baggage cars were wrecked, an engineer and fireman killed, the other engineer hurt so that he died next day, and two other trainmen hurt. The meeting point of the trains had been changed a day or two before by a new time-table, and the engineer of the west-bound train forgot and ran by without stopping.

On the morning of the 19th there was a butting collision between two freight trains on the New York, Pennsylvania & Ohio road near Ravenna, O. Both engines and several cars were wrecked. It is said that one engineer had orders to wait for the other at the first siding before reaching Ravenna, but thought he could make that station in time.

On the morning of the 20th there was a butting collision between two freight trains on the Atchison, Topeka & Santa Fe road near Tecumseh, Kan. Both engines and several cars were badly broken.

Early on the morning of the 25th there was a butting collision between a passenger train and a wild engine on the Missouri, Kansas & Texas road, near Caddo, Ind. Ter. Both engines were wrecked, both firemen and a brakeman badly hurt. The road was blocked nine hours.

On the morning of the 25th a car broke loose from a freight train on the Philadelphia & Reading road at Tamaqua, Pa., and ran down the track at great speed and into the head of a following coal train. The car was wrecked.

On the morning of the 25th there was a butting collision between a wild engine and a passenger train on the Philadelphia & Reading road, near New Ringgold, Pa. Both engines were damaged and two men hurt.

On the morning of the 26th a freight train on the Pittsburgh, Cincinnati & St. Louis road broke in two near Bloomfield, O., and the rear section ran back down grade and into the head of a following freight, meeting it in a small tunnel. Several cars were wrecked, blocking the road five hours.

About noon on the 26th, there was a butting collision between a passenger train and a wild engine on the Minneapolis & St. Louis road, near Minnetonka Mills, Minn. Both engines were wrecked, and a young lady—a telegraph operator—on the wild engine was killed.

On the morning of the 27th an outward bound local passenger train on the Boston & Albany road was thrown over on the inward bound track near the station in Boston, Mass., by a misplaced switch, just as another local passenger train was coming in, and there was a butting collision by which both engines were damaged.

On the afternoon of the 28th on the New York, New Haven & Hartford road at Rye, N. Y., there was a butting collision between a local freight train which was crossing over the east-bound track to switch some cars, and an east-bound express freight. Both engines and 10 cars were wrecked, the wreck being piled up over both tracks. A conductor was killed, a brakeman fatally hurt, two other trainmen slightly injured. The local train had sent out a signal, but the flagman mistook a whistle for his recall and started back too soon.

On the 29th a freight train on the Northern (New Hampshire) road broke in two near Potter Place, N. H., and the rear cars ran back down the grade and into the head of a following passenger train, damaging the engine and two cars.

On the night of the 29th there was a butting collision between two freight trains on the Indianapolis & St. Louis road at Robinson Creek, Ill. Both engines and several cars were wrecked.

CROSSING COLLISION.

On the morning of the 22d a Wabash, St. Louis & Pacific freight train ran into a Lake Shore & Michigan Southern freight at the Sixteenth street crossing, in Chicago, Ill., wrecking an engine and two cars.

DERAILMENTS, BROKEN RAIL.

On the morning of the 13th the engine and 13 cars of a freight train on the Chicago & Grand Trunk road were thrown from the track near Battle Creek, Mich., by a broken rail.

On the night of the 15th the engine of a freight train on the Texas & Pacific road was thrown from the track near Lawrence, Tex., by a broken rail. The engineer was hurt.

On the morning of the 20th the engine and two cars of a passenger train on the Cleveland, Mt. Vernon & Delaware road were thrown from the track near Hudson, O., by a broken rail. Three persons were hurt.

DERAILMENTS, BROKEN WHEEL.

On the morning of the 11th a passenger train on the International & Great Northern road was thrown from the track near San Antonio, Tex., by a broken wheel. One car was wrecked, injuring a brakeman and five passengers.

Very early on the morning of the 20th three cars of a freight train on the New York, Lake Erie & Western road were thrown from the track near Ridgewood, N. J., by a broken wheel.

On the morning of the 26th ten cars of a freight train on the Grand Trunk road were thrown from the track near Paris, Me., by a broken wheel. A brakeman was hurt.

DERAILMENTS, BROKEN AXLE.

On the night of the 14th a coal train on the New York, Lake Erie & Western road was thrown from the track near Port Jervis, N. Y., by a broken axle under the tender.

On the night of the 14th an axle broke under a car of a freight train on the New York, Lake Erie & Western road, near Oxford, N. Y., and five cars were thrown from the track.

On the afternoon of the 24th 12 cars of a freight train on the Chicago, Rock Island & Pacific road were thrown from the track near Prairie City, Ia., by a broken axle.

DERAILMENTS, BROKEN TRUCK.

On the morning of the 7th several cars of a freight train on the Delaware, Lackawanna & Western road were thrown from the track near Snake Hill, N. J., by a broken truck.

On the night of the 31st several cars of a freight train on the New York, New Haven & Hartford road were thrown from the track near Woodmont, N. Y., by the breaking of a truck.

DERAILMENTS, BROKEN BRIDGE.

On the evening of the 19th a passenger train on the Kansas City, Fort Scott & Gulf road broke through a bridge near Cherokee, Kan., and several cars went down and were wrecked, injuring 27 persons, most of them slightly.

On the 25th a freight train on the Texas & Pacific road broke through a bridge at Baker Creek, Tex., which had been partly burned by a slow fire. Nine cars went down and were wrecked, and the wreck caught fire and was burned up.

DERAILMENT, SPREADING OF RAILS.

On the evening of the 20th, a passenger train on the Wabash, St. Louis & Pacific road was thrown from the track in St. Charles, Mo., by the spreading of the rails, and the engine upset just before reaching a high trestle. The engineer was slightly hurt.

DERAILMENTS, ACCIDENTAL OBSTRUCTION.

On the afternoon of the 6th a material train on the Western North Carolina road was thrown from the track

near Icard, N. C., by a tie which fell from a car upon the rail. Three laborers were hurt.

Very early on the morning of the 21st a passenger train on the New York & Canada road struck a rock which had rolled upon the track in a side-hill cut near Dredgen, N. Y. The engine went down into Lake Champlain; the engineer was killed and the fireman hurt.

On the evening of the 30th the engine and two cars of a freight train on the St. Louis, Iron Mountain & Southern road were thrown from the track near Charleston, Mo., by a stick of wood which fell on the track.

DERAILMENTS, CATTLE.

On the morning of the 1st a freight train with a circus on board ran over a cow near Bellevue, Ia., on the Chicago, Milwaukee & St. Paul road. The engine and five cars were thrown from the track and wrecked and the engineer hurt.

On the night of the 13th a passenger train on the Prospect Park & Coney Island road ran over a cow near Brooklyn, N. Y., and one car was thrown from the track, injuring one passenger.

On the afternoon of the 14th a passenger train on the New Haven & Northampton road struck a bull which had strayed on the track near Conway Narrows, Mass., and the engine was thrown from the track.

On the 15th a freight train on the Oregon Railway & Navigation line ran over a cow near Dayton, Wash. Ter., and several cars were thrown from the track, killing one man and injuring three others.

On the evening of the 15th a freight train on the Missouri Pacific road ran over a cow near Rich Hill, Tex., and the engine was thrown from the track.

On the afternoon of the 19th a freight train on the Philadelphia & Reading road ran over a cow near Helfenstein, Pa. The engine was thrown from the track, and ran across a small bridge on the ties, and the bridge and cars were piled up in a bad wreck. A brakeman was slightly hurt.

On the morning of the 21st a repair train on the Wisconsin & Minnesota road ran over a cow near Cadotte Falls, Minn., and six cars were thrown from the track, killing the conductor.

On the afternoon of the 29th a local passenger train on the Philadelphia & Reading road ran over a cow near Trevorton, Pa., and the engine was thrown from the track and damaged.

DERAILMENTS, WASH-OUTS AND LAND-SLIDES.

On the night of the 6th a repair train on the Chicago & Northwestern road went into a wash-out near Moingona, Ia. The engine went down and was wrecked; the fireman and two trackmen were drowned.

On the night of the 21st a train on the Ft. Wayne & Jackson road ran into a wash-out near Ft. Wayne, Ind., wrecking five cars.

On the morning of the 22d a freight train on the Chicago & Northwestern road ran into a wash-out at Waukegan, Ill., and the engine and seven cars were wrecked, killing a brakeman and injuring the engineer and fireman.

On the evening of the 24th a passenger train on the Boston, Hoosac Tunnel & Western road was thrown from the track near Hoosick Falls, N. Y., by a land-slide.

On the night of the 24th a passenger train on the Colorado Central Division of the Union Pacific road ran into a wash-out near Longmont, Col. The engine was wrecked, killing the engineer and a tramp who was stealing a ride, and injuring the fireman.

DERAILMENTS, MISPLACED SWITCH.

On the afternoon of the 23d the engine of a freight train on the Wabash, St. Louis & Pacific road was thrown from the track at Staunton, Ill., by a misplaced switch. A brakeman turned the switch wrong just as the train started; when he saw his mistake he ran away.

On the morning of the 30th a freight train on the Cincinnati, Sandusky & Cleveland road was thrown from the track at Huntsville, O., and the engine was wrecked, killing the fireman and injuring the engineer. The accident was caused by a misplaced switch.

MISCELLANEOUS DERAILMENTS.

On the afternoon of the 6th a flat car loaded with rails broke loose from a construction train on the New Orleans Pacific road in Shreveport, La., and ran down grade at great speed. A switchman was quick enough to turn it on a siding, and it jumped the track.

On the afternoon of the 22d, as a freight train on the New York, New Haven & Hartford road was sending some cars on a siding at Harrison, N. Y., by a flying switch, the cars were not stopped in time, and ran over the end of the siding and into the depot, knocking the passenger room into a complete wreck.

MALICIOUS DERAILMENTS.

On the 8th the engine and three cars of a freight train on the Houston & Texas Central road were thrown from the track near Whitney, Tex., by some heavy timbers laid across the rails.

Very early on the morning of the 21st the engine and several cars of a freight train on the Atchison, Topeka & Santa Fe road were thrown from the track near Lawrence, Kan., where a rail had been removed by some persons unknown. It is believed that the intention was to wreck the east-bound express and rob the express car.

Near midnight on the 27th a passenger train on the Illinois Central road was thrown from the track at Warren, Ill., by a switch which had been purposely misplaced. The engine and two cars were upset.

UNEXPLAINED DERAILMENTS.

On the afternoon of the 5th a repair train on the Texas & Pacific road ran off the track near Kildare, Tex., killing one laborer and injuring two others.

On the afternoon of the 6th a yard engine on the Connecticut River road ran off the track and down a bank in the yard at Chicopee, Mass., and was damaged.

On the afternoon of the 7th two cars of a passenger train on the Western North Carolina road ran off the track near Morganton, N. C. Two passengers were hurt.

On the night of the 8th a passenger train on the Western & Atlantic road ran off the track near Resaca, Ga., doing some damage.

On the 10th the engine of a freight train of the East St. Louis & Carondelet road ran off the track near East Carondelet, Ill., and was badly damaged, killing the fireman and a boy and injuring the engineer.

On the night of the 10th several cars of a freight train on the Lake Erie & Western road were thrown off the track near LaFayette, Ind., and wrecked.

On the morning of the 12th a car of a passenger train on the New Jersey Southern road ran off the track near the bridge over Carasajo Lake, N. J. The car ran along on the ties till it reached the bridge, when it went off into the lake, knocking down the bridge. The car was wrecked, injuring the conductor and four passengers.

On the afternoon of the 12th two cars of a repair train on the Indianapolis & Vincennes road ran off the track near Spencer, Ind. The conductor was killed and a laborer hurt.

On the afternoon of the 14th a car of a freight train on the Concord road ran off the track at Garvin's Falls, N. H.,

and went over a bridge just beyond, falling into the Merri
mack River.

On the 16th a freight train on the Savannah, Florida & Western road ran off the track near Quitman, Ga., and several cars were wrecked.

On the morning of the 19th three cars of a freight train on the Vermont Central road ran off the track on a high bridge at North Hartland, Vt., and all three went off the

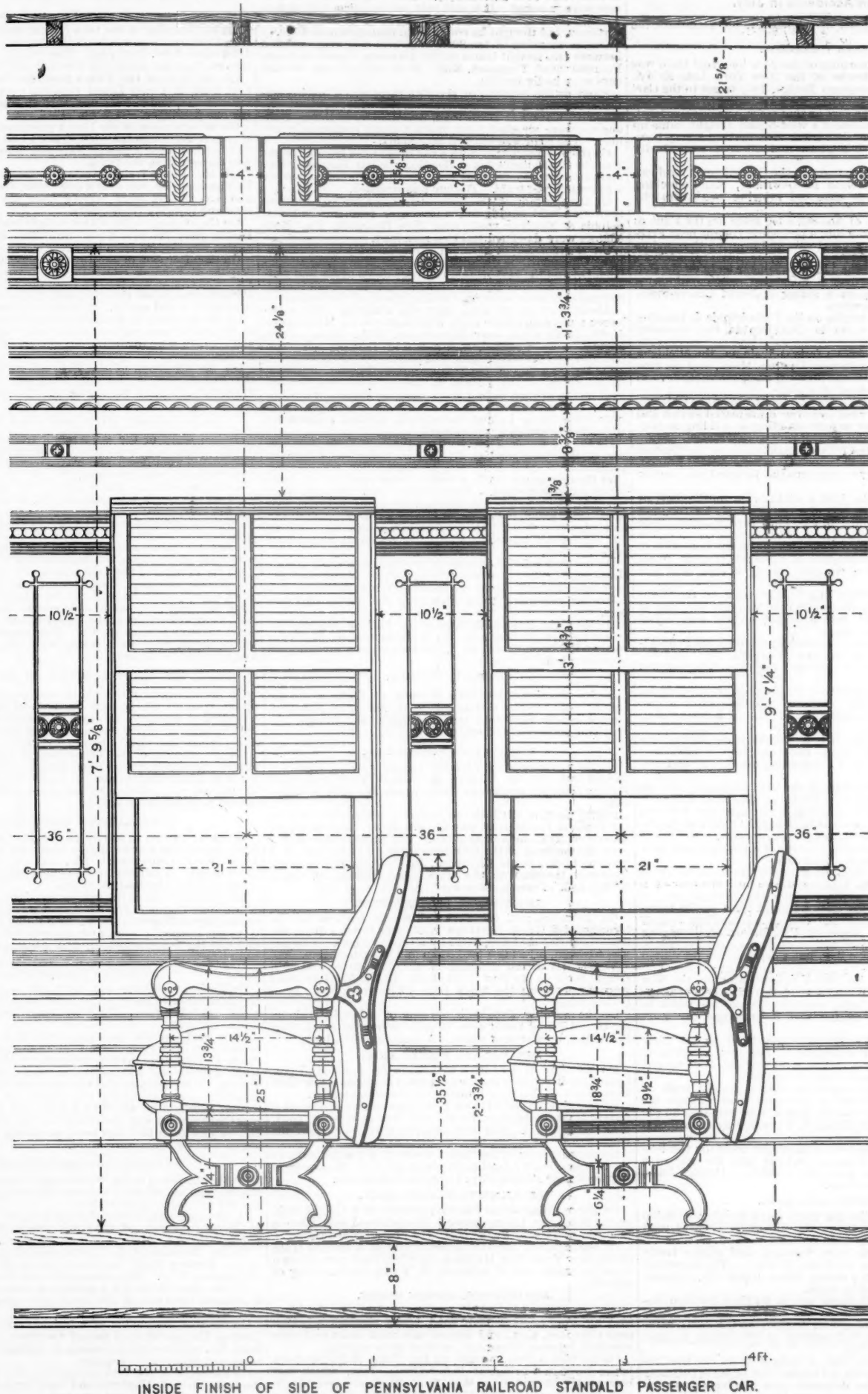
New York, Lake Erie & Western road ran off the track near Otisville, N. Y., blocking one track three hours.

On the afternoon of the 29d a construction train on the Texas & Pacific road ran off the track at Sand Hills, Tex., and several cars were wrecked, killing three laborers and injuring 10 others.

On the evening of the 25th a construction train on the Richmond & Allegheny road ran off the track near

the New York Central & Hudson River road exploded its boiler when near Chili, N. Y., tearing the engine to pieces and injuring the engineer very badly.

On the afternoon of the 31st the engine of a freight train on the Chicago & Northwestern road exploded its boiler near Peshtigo, Wis. The engine was completely wrecked, five cars damaged, a brakeman killed, the engineer and fireman hurt.



bridge and fell to the ground below, nearly 100 feet. A brakeman went down with the cars and was hurt.

On the morning of the 20th the engine of a passenger train on the Philadelphia & Reading road ran off the track at Manayunk, Pa., blocking the road an hour.

On the afternoon of the 20th a car of a passenger train on the Lebanon Springs road ran off the track and upset near Petersburg Junction, N. Y., injuring one man slightly.

On the morning of the 21st several cars of a freight train on the Louisville & Nashville road ran off the track near Springfield, Tenn., and were wrecked.

On the night of the 29d four cars of a freight train on the

Bent Creek, Va., wrecking five cars, injuring two laborers fatally, the engineer, conductor and three laborers less severely.

Early on the morning of the 28th three cars of a coal train on the New York, Lake Erie & Western road ran off the track at Middletown, N. Y., and one car was wrecked.

On the afternoon of the 29th two cars of a passenger train on the Chicago, Milwaukee & St. Paul road ran off the track near Washington Mills, Ia., and upset, injuring the conductor and a passenger.

BOILER EXPLOSIONS.

On the morning of the 8th the engine of a freight train on

OTHER ACCIDENTS

On the afternoon of the 2d the engine of a passenger train on the Baltimore & Potomac road broke a parallel rod near Washington, doing some damage.

On the morning of the 15th a tire broke on a driving wheel of the engine of a freight train on the Central Railroad of Georgia, near Milner, Ga. The engineer jumped and was hurt. The engine did not leave the track.

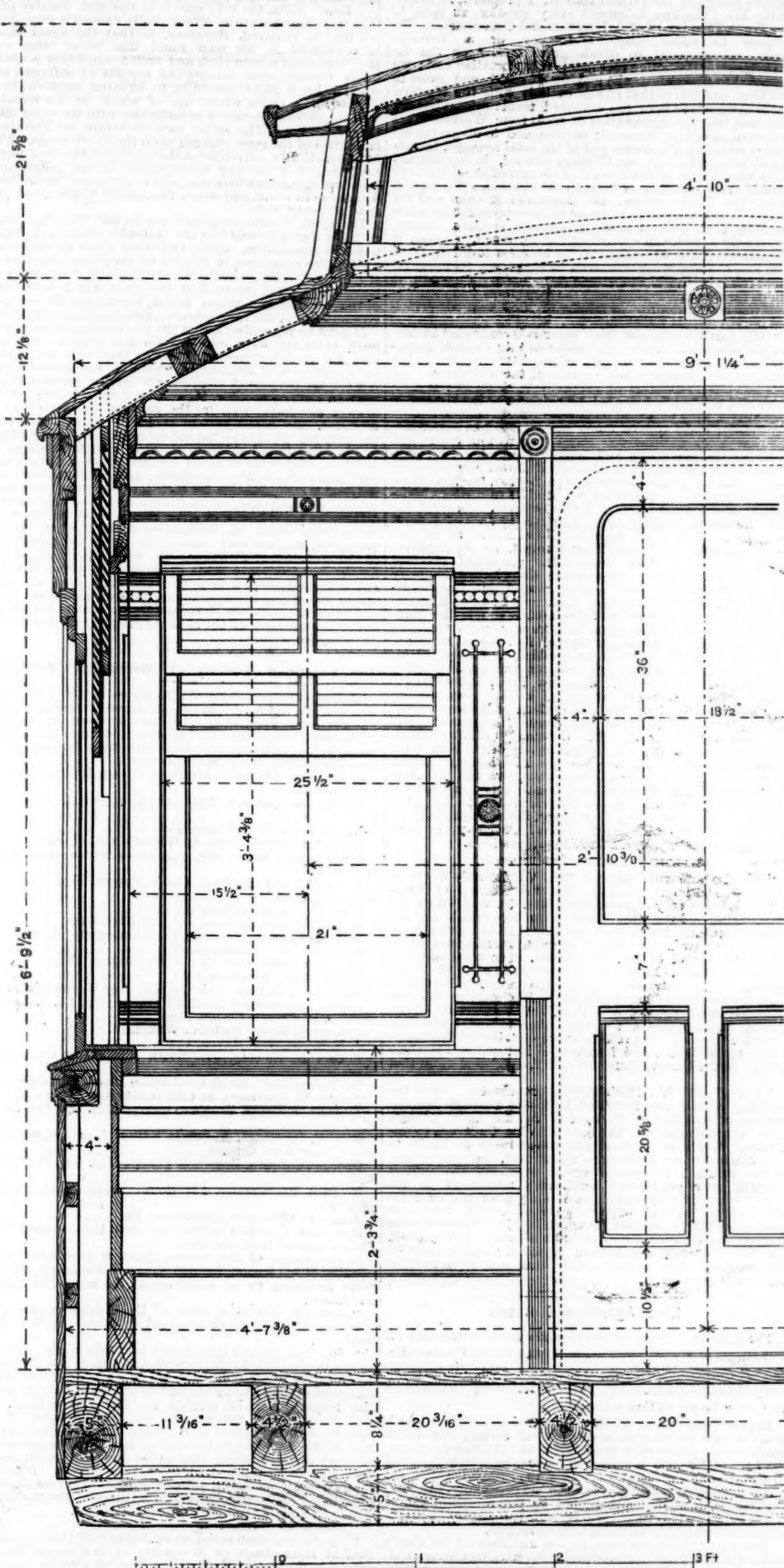
On the morning of the 20th the engine of a passenger train on the New York, Central & Hudson River road broke a parallel rod when near Whitesboro, N. Y. One side of the engine was badly torn up.

This is a total of 102 accidents, whereby 38 persons were killed and 122 injured. Twenty accidents caused the death of one or more persons; 24 caused injury, but not death, while in 58 cases, or 56.3 per cent. of the whole number, there was no injury serious enough for record.

Pennsylvania Railroad Standard Passenger Car.

III.

The two engravings, published with this number, show the inside finish of the side, end and seats of one of these cars.



INSIDE FINISH OF END OF PENNSYLVANIA RAILROAD STANDARD PASSENGER CAR

The record shows for the seven months of this year up to July 31 a total of 908 accidents, 210 killed and 910 injured; a monthly average of 115.4 accidents, 30.0 killed and 130.0 injured. This monthly average was much greater than in the preceding year.

The interior of the car of this pattern is finished either in quartered oak or ash. The panels between the windows are one solid piece. As little molding is used as possible, and no veneers.

The construction from the floor to the roof is solid, square

and honest; there is no jugglery, no wood puzzles, so common to veneer and molding car work. The treatment is in accordance with the Queen Anne style.

The walls are relieved by carving on the facing of the deck bearers, on the paneling above the windows, and on the main window panels. The designs are simple and neat, and are intended more to enrich the general appearance of the interior than to attract attention to themselves. They vary in different cars, in some, as in the one illustrated in these cuts, it is a simple rosette on a cedar or mahogany block, let into the window panel, with some fret work at the joint of the panel with the upper lining, and a few beads and rosettes in the paneling above the windows and in the upper deck facing. In others the design is beaded and diapered work, extending up half the length of the window panel, with appropriate changes in the work above the windows.

In still a third series of cars, the carving is floral and includes three different patterns of window panels for each car, these patterns alternate one another: one is a bunch of bull rushes, another a delicate tracery of oak leaves, and a third several intertwined branches of mountain laurel.

The beauty of the side walls of these cars is still further enhanced by the contrasts and harmonies in the colors of the woods used. The sash and blind stiles and windows sills are of cherry, while the blind slats are of selected birdseye maple.

The brilliancy of the maple in the mild red-brown frame of the cherry makes a pleasing contrast with the solid oak of the walls.

The seat frames are solid wood, ornamented by beads and fillets in keeping with the prevailing style of the car. The solid wood is used in preference to the iron frames, so frequent on some roads, not only on account of its being less harmful in case of accidents, but because the treatment in designing the interior of a car is necessarily much the same as that in a house. An iron seat would not be any more admissible in the former than in the latter. The upholstery is either in golden brown or cherry red, depending upon the tone of the head-lining. Only one color is used in a car; fronts and backs are made of the same material.

The seat itself is made, according to a recent invention, low and broad, with the outside edge canted up, so that there is no tendency for the passenger to slip forward. The back, with its soft springs, is inclined to the angle of the seat.

The head-lining is of muslin, especially manufactured for the purpose, and prepared for decorating by the careful application of coats of sizing, priming and surfacing. The patterns are traced on the lining by a pounce bag, after it has been brought to the proper tint, and then painted by decorators. The colors and figures of the design are in keeping with the prevailing treatment of the car. A division is made into panels to relieve its length; the pattern, usually very simple and always conventional, is intended to give, as far as possible, an effect of height and airiness. These patterns and colors are varied in different cars; in some the predominant tone is a deep red, in others a light drab or grayish brown.

As with the carving, the variety in design is enough to relieve the eye without making any vital changes. There is just enough change to give the cars some individuality in minor points without interfering with the ease of repairing or rebuilding.

The ventilator openers are entirely under the control of the passengers; the deck sash they operate are fitted with ruby engraved glass. The design of the engraving, in keeping with the body of the car, is shown in the side elevation. The glass in the main windows is polished plate imported from France.

The heat is provided by two stoves, one at either end of the car, taking air from the outside, heating and conducting it through pipes on the sides, below the seats, to registers at the feet of each passenger. The boxing around the pipes provides a comfortable rest for the feet, and the window sill is made sufficiently wide to provide a similar one for the arm. The heating of the car is assisted by the layer of mineral wool between the floor proper and a false floor attached to the bottom of the sills, which also serves the purpose of deadening the noise.

The windows can be raised and left at any height, the same as a house window; they are hung on spring sash balances, which can be seen projecting through the roof in the engraving, covered over with tin caps. The blinds can be regulated to several different heights, so as to exclude partly or entirely the rays of the sun.

The saloon is spacious and airy, and is, in some cars, fitted with a washstand and looking glass.

The water tanks are filled from the roof of the car on the outside, and by a late improvement have been so arranged that the water cannot become warm and tepid by running through pipes, the spigot being tapped into the tank direct.

None of the wood work in the interior of the car is painted, except the floor; the hard wood is filled with a special mixture which fills up the grain of the wood without changing its color, it is then varnished and rubbed until all the gloss of the varnish is gone, and then finally oiled. These operations give the wood a deep, rich tone.

It is this deep, rich tone of the solid oak or ash, the brilliancy of the maple in the blinds of the large and spacious windows, the harmonizing tints of the head-linings and the upholstery, and the accenting of the whole by the polished bronze trimmings that gives the car its beauty.

The outside of the car is painted a Tuscan red; the lettering, striping and numbering is in accordance with the general spirit of the design.

A long gold stripe, not apparent in the engraving, is run in connection with ivory black line shown.

The painting involves a greater expenditure of time than

any other class of work about the car. The priming, the filling and surfacing, the coloring and varnishing include no less than 16 different operations.

The platforms are fitted with the Janney couplers and buffers, and are protected overhead by bonnets extending from the roofs, suitably provided with aprons, to prevent the entrance of dust into the doors. Air for ventilation is taken into the car from under these bonnets.

The deck sash, all along the car, are covered with wire screens, shown in the engraving, to exclude the dust when the sash are opened.

The seats and seat ends of these cars are of new design, of which we will give a more detailed engraving next week.

Mr. Blanchard on the Situation.

The day after the Joint Executive Committee meeting a reporter of the *Tribune* interviewed Mr. G. R. Blanchard, Vice-President of the New York, Lake Erie & Western, calling his attention especially to what Mr. Vanderbilt had said shortly before. From the report of this interview with Mr. Blanchard we take the following:

"Is the New York Central now more seriously threatened by rival construction than any other trunk line?" asked the reporter.

"Neither the Chesapeake & Ohio, the Baltimore & Ohio, the Pennsylvania nor the Grand Trunk road is threatened with parallel rail lines. The extension of the Lackawanna road to Buffalo cannot be said to be parallel to the Erie, as that company has forwarded all its coal and through-freight traffic by the New York Central through Syracuse. Add to this—which is likely appreciably to decrease the traffic of the New York Central—the construction of the West Shore road, parallel to it, for which its bankers inform me \$25,000,000 is now ready; the extension of the Ontario & Western; the Boston, Hoosac Tunnel & Western, which is pushing its way westward through the Mohawk Valley; the Erie Company's connection to New England by way of Fishkill, to be opened, probably, in October, and the growing business of the Pennsylvania Railroad to and from New England by New York, and you see the New York Central Company is much more seriously attacked locally by pending railway enterprises than all the other trunk lines combined. If President Vanderbilt knows that low rates can prevent their completion, he is justified in the endeavor, upon the principle of self-preservation, and the other companies should look reasonably and fairly at his difficulty. The best financial and business thought of the country, however, is opposed to the belief that they can be so stopped. They have gone too far; the bonds in most cases have been taken by responsible syndicates, and the money in many cases is in trust for purposes from which it cannot be diverted. Mr. Vanderbilt seems, however, to ignore these considerations, and offers as reason for his present action only the course of his rivals as to rates. If this be the fact, the machinery of the Board of Arbitration united to that of the Commissioner's office has been provided, under former trunk line agreements, for their definite adjustment. But although the arbitrators have been appointed for upward of two years, and the Grand Trunk, Baltimore & Ohio, Pennsylvania and Erie companies have during that time repeatedly asked that questions at issue should be decided by it, in no single instance has the New York Central Company ever permitted a question, in which it was one of the principals, to be referred to that Board; and in every case where the other companies have offered and voted to submit all questions at issue to that tribunal, the New York Central Company has, without exception, voted no, or by declining to vote at all, accomplished the same result. Its last refusal was the voting no on three proposals for arbitration moved by the President of this company on the 17th of June 1st.

"President Vanderbilt seems to have such admiration for the pool system of the roads northwest from Chicago (as where he says: 'It is a pity we did not have some of their sense and honesty'), that his repeated refusal to submit the questions involved in a similar trunk line pool to the Board of Arbitration for its decision is contradictory and paradoxical."

ERIE'S LARGE DELIVERIES OF GRAIN.

"How do you explain the large increase in the deliveries of grain by the Erie road?"

"President Vanderbilt says: 'By cutting rates and by no other means. Every railroad man in the country who knows anything about it will tell you that he was astonished that the Central stood it so long. I have simply followed their rates.' Now I take pleasure in permitting Vice-President Rutter, of the New York Central road, to answer his chief by the following letter:

"NEW YORK CENTRAL AND HUDSON RIVER R. R. Co.
"OFFICE OF THE THIRD VICE-PRESIDENT,
"NEW YORK, June 3, 1881.
"G. R. BLANCHARD, ESQ., Vice-President N. Y., L. E. and W. R. R."

"DEAR SIR: I regret feeling compelled to give you notice that the private personal agreement which we made April 16 and which was reduced to writing May 10 is hereby terminated. I have no reason to believe that you have violated the agreement; on the contrary, I believe you have kept it; but your evident inability to hold your connections has counteracted the benefits we hoped to derive from our arrangement. Very truly yours,
"J. H. RUTTER, Third Vice-President."

"Of course Mr. Rutter loyally obeyed orders in giving this notice, but the cause assigned is an excuse and not a reason. The Erie Company uses in the West at this time roads under the control of the New York Central and Pennsylvania companies; but the agreement to which Mr. Rutter refers was for the very purpose of mutually controlling other as well as those connections, and it has only recently appeared that the cuts to which reference was made, as indicating our inability to control connections, and the subsequently assigned cause of this letter, were made from Peoria; and it now appears that they were made by both the New York Central and the Erie road, and in both cases without knowledge on the part of either company, and in the face of the denials of the accused Western road. Recently large claims have been presented to both the Central and the Erie companies for drawbacks, and payment alike refused by both. At the time of making the agreement of April 16, to which Mr. Rutter refers, I stated distinctly that a former officer of our company had made some contracts, and in the presence of the Commissioner and others, proposed to divide the so contracted business, which was not over 500,000 bushels of grain, equally with the New York Central, but the offer was declined.

THE MEETING OF WEDNESDAY.

"I never knew, however, that either the pot or the kettle was any the less black for their discussion, and the subject to which the meeting of yesterday addressed itself was not

to call names, but to consider more sensible and paramount methods for the future. Our company was requested to send an officer fully authorized to act, and after conference with President Jewett at Saratoga, I stated to the meeting that we had no criticisms to offer as to the motives of our rivals, and no hostile reprisals to enforce. After General Manager Gault, of the Wabash Company, had stated the injurious results of the present contest, I proposed, in behalf of the Erie Company, to submit every question at issue to the Trunk Line Board of Arbitration and Commissioner. We propose to make either a money or a tonnage pool; we proposed to divide gross money or the remainder after deducting reasonable transportation cost; we proposed to discontinue the making of east-bound rates in the East, and repose that power entirely with the Western roads upon whose lines the eastward traffic originates; we proposed that the organization of pools from Western cities eastward should be extended; we proposed to divide the actual carriage of the classes and of the total tonnage, including all we received at our Western termini, in any proportions fixed by the arbitrators; and we agreed at all times to submit every question of issue to arbitration. We understand the Pennsylvania, the Baltimore & Ohio and the Grand Trunk companies to assent to these propositions while the New York Central alone arbitrarily declines. It proposed only to make an agreement for three or five years, if we allowed it the percentage of the business it did in 1880. The Erie Company might as well have thrown its improvement funds in the North River as to make an agreement which for those periods ignored the benefits it had secured, as it was not until after the middle of 1880 that our principal improvements were completed.

"We further proposed that two roads controlled by Mr. Vanderbilt, namely, the Lake Shore and the Canada Southern, should act as the 'eveners' of this tonnage between the Erie and the Central in the awards of the arbitrators. As this was but a repetition of propositions made by our company and printed in repeated proceedings of the Executive Committee, they possessed no novelty except reiteration.

"Briefly, and I believe fairly stated, it is true that while the New York Central was completing its four tracks and terminal improvements and largely increasing its equipment, and while the Pennsylvania Railroad was spending large sums to achieve its present perfection, the Erie Company from causes publicly known, and its subsequent bankruptcy, lost ground in its relative business. In 1873, the Erie Company brought more through grain and general freights to New York than the New York Central; but since that time the New York Central, by its improvement, if by no other causes, has gradually reversed the former figures. Meantime the Erie Company has double-tracked and narrow-gauged its line; constructed elevators both at New York and Buffalo; it has increased its steam fleet on the lakes until it equals the fleets of both the New York Central and Pennsylvania roads in carrying capacity; it has increased all its terminal facilities. Upwards of 12,000 cars have been added to its equipment, all of which now run through without transfer instead of breaking bulk as formerly. The New York, Pennsylvania & Ohio road has been narrow gauged and we have secured new and all-rail New England outlets. All these causes have legitimately combined to increase the percentage of the total business of the Erie Company. Similar causes combined fairly to increase the percentage of the New York Central after 1873. If, therefore, the Erie increase cannot be accounted for by these improvements, how can the New York Central gain after 1873 be honestly accounted for by its improved facilities? If, as President Vanderbilt says, the Erie has gained only by cut rates, the conclusion is irresistible that the New York Central Company has done nothing but cut rates against the Erie since 1874.

BALTIMORE RATES AND TRAFFIC.

"We also note with interest Mr. Vanderbilt's desire to adjust the Baltimore question. But the business of Baltimore has been very considerably added to, and within my personal knowledge large cuts have been made by the Canada Southern fast freight line to and from Baltimore by way of the New York Central through Buffalo and roads under the control of Mr. Vanderbilt. The total distance from Cincinnati, Louisville, Indianapolis and St. Louis averages more than two hundred miles further to Baltimore than the average of the routes of the Baltimore & Ohio and Pennsylvania railroads, and President Vanderbilt carries over that longer distance cheaper than to and from New York. I suggest, as a primary step in solving the Baltimore riddle and to lessen the business of Baltimore, his withdrawal of the Canada Southern fast freight line from that city.

"I see," said Mr. Blanchard in conclusion, "that the pending contest has reinvited in many quarters the discussion of remedies to be applied by the states through their Legislatures and the nation in its Congress, to this disease. While we regard such interference as likely to complicate and injure the general interest, and unnecessary if the railroad companies would approach the subject through their established arbitrating machinery in the proper spirit, it is undeniable that many good minds heretofore opposed to such cures are endeavoring to find a safe and conservative method by which legislative agencies can prevent such ruinous results as those which now prevail. The Erie Company has no wish or spirit inconsistent with the speediest, most amicable and permanent adjustment of this whole question."

Line Agents and Rates.

The Chicago Times recently made some comments on statements of Mr. Albert Fink published in the *Produce Exchange Bulletin* of July 22, which we copied. These statements have called from Mr. Fink the following explanation in a letter to the Chicago Times:

In your issue of July 27 there appeared an article in which you call into question the correctness of certain statements made by me (which were published in the *Produce Exchange Bulletin* of July 22) in regard to the causes which have led to the present war of rates between the railroad companies. If your criticism reflected only upon me personally, I should, perhaps, take no notice of it; but as you represent me as doing injustice to a large class of railroad employes, it becomes necessary for me to make a correction.

You say: "It sounds badly to hear an officer, of Mr. Fink's acknowledged honesty and experience, charging the responsibility for all this disruption of covenants and demoralization of tariff-sheets upon a class of employees who are alleged to be outside of the jurisdiction of anybody."

I have made no such charge. The charge that I did make was against "the methods and systems" under which these soliciting agents are employed, not against the agents themselves. Nor did I say that they were not under the "jurisdiction of anybody." What I said was: "They are not under the jurisdiction of any one person."

According to the organization of the co-operative fast freight lines, and the practical methods of conducting their business, every manager or general freight agent of any one of the roads forming part of the line—and there are often a great many—can authorize the soliciting line agents to

make a reduction of the established and published tariff. The soliciting agent is obliged to obey such instructions. The difficulty is, that these soliciting agents have too many "bosses," and are not responsible exclusively to any one. Under such a system the responsibility for cutting rates can hardly ever be located; and when located upon any one company, the defence is made that some other company had preceded it in making the reduction, and that it was obliged to follow. From the very nature of the case, positive proof that this alleged state of affairs really existed is impossible. All that is required, therefore, is that the agent should be convinced in his own mind that some other company has made a reduction, and such a conviction is always easily formed upon rumors and reports of shippers, etc., when he has a right, according to existing methods, to reduce the rate of the whole line of which he is a member, without previous notice or consultation with the other members of the line. The latter have, therefore, no knowledge or control of the rates charged upon their own roads. They have practically surrendered the control of the most important branch of railway management to the judgment of some one else somewhere else, and it is almost impossible to determine in whom and where the control of this great railroad property rests.

The agent of some bankrupt road in the West can start a railroad war that will cost the railroads millions of dollars, unsettle commercial values, and bring about all the evils of unjust discrimination, in spite of all the resolutions that the trunk line presidents and general managers of the roads can pass. This is not the fault of the agent, but it is the fault of the organization under which, heretofore, the competitive business of the railroads companies has been transacted.

It must be remembered that the line organizations which I have criticised were intended for the express purpose of carrying on this competitive strife: they were not created for the purpose of maintaining equitable and proper tariffs, but for the purpose of securing the largest amount of tonnage to each competitor, regardless of net revenues. They answer admirably well for the purpose for which they are intended. No better system could be devised. But when the railroad companies intend to maintain the established tariffs alike to all shippers situated alike, and adjust the tariffs equitably between all localities, and maintain them with some degree of permanency, and also to secure some reasonable compensation for their services, these line organizations, although they are necessary and beneficial, must be differently organized, and some means must be adopted to bring them under the intelligent control of the general managers, who are held responsible for the financial results of the operation of railroads. The railroad companies have for the last few years made great efforts in that direction, and will, no doubt, continue to make them, until the interests of the railroad companies are better guarded than now, and until the demands of the public for a more correct and better management of the railroad property of this country are complied with.

The American Society of Mechanical Engineers.

The regular summer meeting of the society was opened at Altoona, Pa., Aug. 10, about 40 members being present. The President, Prof. R. H. Thurston, occupied the chair.

The announcement of a ballot, cast during the interval since the last meeting, was made, and the following gentlemen declared elected to membership:

J. M. Allen, President Hartford Steam Boiler Inspection and Insurance Co.
Jerome M. Badger, 121 Chambers street, New York City.

Alfred Betts, Wilmington, Del.
George M. Bond, Pratt & Whitney Co., Hartford, Conn.
James Brady, Brady Mfg. Co., 257-9 Water street, Brooklyn, N. Y.

A. Hamilton Campbell, Colt's Patent Fire Arms Co., Hartford, Conn.
Luke Chapman, Collinsville, Conn.

Z. B. Coes, Boston Blower Co., Boston, Mass.
William Cowles, P. O. Box 18, Schenectady, N. Y.
J. D. Cox, Jr., Cleveland, Ohio.

Geo. H. Crosby, P. O. Box 1,164, Boston, Mass.
Gram Curtis, Scranton, Pa.
Prof. A. J. DuBois, Yale College, New Haven, Conn.

Albert Francis Hall, George F. Blake Mfg. Co., Causeway and Friend streets, Boston, Mass.
Charles J. King, Madison, Wisconsin.

J. F. Klein, New Haven, Conn.
Robert B. Lincoln, Jr., South Boston Iron Co., Boston, Mass.

De Courcy May, 42 Mount Vernon Place, Baltimore, Md.
George W. Maynard, 24 Cliff street, New York City.
Edward H. Parks, Brown & Sharpe Mfg. Co., Providence, R. I.

Wm. E. Partridge, Associate Editor *Iron Age*, 83 Reade street, New York City.
George H. Smith, Brown & Sharpe Mfg. Co., Providence, R. I.

Norman W. Wheeler, 147 South Front street, Philadelphia, Pa.
James P. Witherow, Pittsburgh, Pa.

President Thurston announced that there would be no formal address from the chair.

In the course of the routine business transacted at the opening of the session, the following amendments to the rules were proposed, to be acted on at the annual meeting in February:

"Resolved, That the rules of the American Society of Mechanical Engineers be amended as follows: Article 38 to read:

"The Council shall have power to decide on the propriety of communicating to the Society any paper which may be received, or to refer it back to its author for revision or amendment; also, to decide which of the papers read before the Society shall be printed in the Transactions. Before such paper appears in the Transactions of the Society, a revised proof of the paper and discussion shall be sent by the Secretary to the author, and so far as practicable to every member taking part in the discussion, with request that they call attention to any errors therein. When the Council shall so direct, printed copies of papers shall be distributed to the membership in advance of the meeting at which they are to be presented and discussed.

"Article 40 to read:

"The Society shall claim no exclusive copyright in papers read at its meetings or in reports of discussions thereon, except in the matter of official publication with the Society's imprint, as its Transactions. The Secretary shall have sole possession of papers between the time of their acceptance by the Council and their reading, together with the drawings illustrating the same; and at the time of said reading he shall have printed copies for distribution to members present, and shall give the same to representatives of such newspapers as desire them for unofficial publication; in whole or in part. Copies of the drawings shall at the same time be furnished to journals which have previously made application for them, at the cost of making such copies. Provided, That the author of a paper shall be in no case be deprived of his right to give copies of the same to any one he chooses, before it is read or after-

wards; but if such paper is published unofficially prior to the meeting at which it is to be read, it shall be considered as withdrawn by the author, and shall not be presented for reading or discussion as a paper of the Society.

The proposed amendments called out considerable discussion.

The first paper read was by Jacob Reese, on "Rolled Cast Steel Car Wheels." It was discussed by Messrs. Laureau, Durfee, Grimshaw and Dr. Dudley.

The President called Mr. Cogswell to the chair, and read a "Note on Method of Regulating Steam Engines," being a continuation of the general subject presented by him in his paper at the Hartford meeting. It was discussed by Messrs. Stirling, Porter, Prof. Robinson, and others.

The afternoon was devoted to a visit to the extensive shops of the Pennsylvania Railroad, through which the members were conducted by Mr. Theo. N. Ely, Superintendent of the Motive Power, and several of his assistants.

At the evening session the following papers were read: "Improved Methods of Submarine Telegraphy," by the Secretary, T. W. Rae; "Coffin's Averaging Instrument," by Prof. John E. Sweet; and "Comparisons between Different Types of Engines," by Chas. A. Hague.

On the second day (Thursday) the members went to Johnstown by special train, stopping at Cresson Springs by the way. At Johnstown they visited the works of the Cambria Iron Co., and partook of lunch on the invitation of its officers. In the afternoon another excursion was given to Bell's Mills and over the Bell's Gap road.

The Friday morning and afternoon sessions closed the meeting. Papers were read upon "Counter-balancing Engines," by Prof. S. W. Robinson, of the Ohio State University; "Method of Cataloguing and Indexing Drawings," by A. F. Hall; "Nomenclature of Machinery," by Oberlin Smith; "The Most Economical Point of Cut-off in Steam Engines," by A. R. Wolff and James E. Denton; also, by title, "The Arrangement and Maintenance of Systems of Fire Protection for Mills," by C. J. H. Woodbury.

The report of the Treasurer, Lycurgus B. Moore, was read, showing total cash receipts from all sources \$6,185.43. Total expenditures, as audited by Finance Committee, \$3,288.85. The Treasurer has in bank \$619.09, and in safe deposit vaults, United States 4 per cent. bonds, which cost \$2,277.50. There is due from original and new members \$735.

On motion the names of W. Barnet Le Van and Dr. Robert Grimshaw were added to the Committee on Regular Meetings.

After the usual resolutions of thanks, etc., the society adjourned, and the meeting closed.

The Rye Collision on the New York, New Haven & Hartford.

The coroner's jury upon the collision at Rye found the following verdict:

"We find that Eli C. Lattin came to his death, July 28, 1881, at Rye station, by a collision on the New York, New Haven & Hartford Railroad, caused by the negligence of the employees of Conductor James H. Spalding's train and the employees at Rye station in not observing the rules of the company; also, we charge the officers of the New York, New Haven & Hartford Railroad Company with gross negligence of duty in not familiarizing themselves with the fact that their rules have been violated at Rye for the past 10 years."

This is a serious censure upon railroad men of the experience of Vice-President Reed and Superintendent Moody, but it seems to be fully deserved. Habitual and open violation of rules cannot go on for years without attracting the knowledge of superior officers, unless there is some defect in discipline. It was clearly proven at Rye that the second man or baggage-master in charge of the stations had for one of his regular duties to flag trains which were switching there, and that such service was contrary to rules; also that this man in flagging often came in before he was called by the train which he was protecting; also that some engineers were accustomed to run by his flag. In fact, so far as the investigation went, it disclosed violation within violation until both Reed and Moody admit that they have "heard a great deal here about violation of rules which they did not know before." They have always assumed that employees would report violations of rules, but Dunn was not likely to report Field, who employed him, nor is there in general a disposition among railroad employees to report each other. Perhaps an employee who goes to the superintendent with a complaint of violation on the part of some fellow in employ will get a very surly answer and be told to mind his own business. Is that the case upon any other railroads running into Springfield?

As railroads do more business, employ more men and multiply the activities which they crowd into the same 24 hours, the perfect co-operation of every member of the force becomes a matter of increasing moment. It will not do for officers to assume that employees will report violations of rules, unless it is made for their interests and unless they are fully protected in their disclosures. It will not do for the chief officers to assume that where they see the operation of the road moving smoothly it always moves smoothly. There is increasing need of vigilance and of systematic and organized inspection by special agents of the staff.—*Springfield (Mass.) Republican*, Aug. 13.

Western Association General Passenger & Ticket Agents.

This Association met at the Grand Pacific Hotel, Chicago, Aug. 10, pursuant to call. There were present H. C. Wentworth, Michigan Central; W. P. Johnson, Lake Shore & Michigan Southern; T. F. Barry, Marietta & Cincinnati; John Egan, Cincinnati, Indianapolis, St. Louis & Chicago; France Chandler, Missouri Pacific; S. K. Hooper, Hannibal & St. Joseph; J. J. Archer, Scioto Valley; Murray Keller, Louisville, New Albany & Chicago; B. B. Anderson, Peoria, Decatur, & Evansville; James Barker, Wisconsin Central; B. W. Wrenn, Kenesaw Route; C. C. Cobb, Pittsburgh, Cincinnati & St. Louis; C. W. Adams, Pennsylvania Company; William Edgar, Great Western of Canada; A. J. Smith, Cleveland, Columbus, Cincinnati & Indianapolis; G. W. Smith, Lake Erie & Western; B. F. Mills, Burlington, Cedar Rapids & Northern; Percival Lowell, Chicago, Burlington & Quincy; James Charlton, Chicago & Alton; C. P. Atmore, Louisville & Nashville; G. W. Ogilvie, Des Moines & Fort Dodge; H. C. Townsend and George H. Daniels, Wabash, St. Louis & Pacific; W. A. Thrall, Chicago & Northwestern; A. V. H. Carpenter, Chicago, Milwaukee & St. Paul.

The first subject that came up for discussion was: "Round trip tickets. Should not the rate for those going by one road and back by another be higher than where the passenger goes and returns by the same road?"

This was after a lengthy discussion decided in the affirmative.

The second under discussion was: "Cannot the members of this Association agree upon a uniform contract for round-trip excursion tickets of all kinds, which shall not require

the printing of new tickets every season? this having become a great burden upon most of the lines interested." It was decided to adopt the contract approved by the National Association.

In regard to the third subject—"Cannot this Association agree upon a uniform reduction for important stated meetings, such as religious bodies, meetings of Grand Lodges of Masons, Odd Fellows, Temperance organizations, State and County Fairs, etc., etc.?"—it was decided that such uniform reduction should be made.

The fourth subject—"Is it not feasible for the lines, members of this Association, which are in competition with each other, to adopt a system of mutual notification in cases where a reduction in rates seems to be necessary, with a view to producing uniformity in the conduct of the business?" was decided in the affirmative.

The fifth question—"To amend the Constitution so as to permit the representatives of the Cincinnati Southern, Louisville Short Line, Kentucky Central, and Chesapeake & Ohio railways to become members of this Association, notice having been given of this action at the last meeting"—was agreed upon without discussion, and the above lines were admitted to membership.

The sixth subject—"Owing to the fact that the National Association at its last meeting adopted a resolution which virtually restricts the issue of coupon tickets to two classes, would it not be well for this Association to take such action as will eventually lead to greater uniformity in the colors or tints of coupon tickets?"—was referred to the National Association for its action.

The seventh question—"Will not all lines in this Association agree to conform to circular of the Central Pacific Railroad, dated Feb. 15, 1881, requiring signature of purchaser and witness on all tickets sold over those lines?"—was decided in the affirmative.

The eighth subject—"Is it not advisable to print all new issues of coupon tickets of the signature-contract style, with a view of requiring the signature of purchaser on all coupon tickets sold?"—was also decided in the affirmative.

The ninth subject—"Owing to the fact that the present form of limited ticket permits of the scalping of local business to a greater or less extent, cannot the lines, members of this Association, adopt a continuous passage ticket, such as is now in use by some of the lines out of Chicago and St. Louis?"—was declared impracticable.

The consideration of the tenth subject—"The practice of placing the return portion of round-trip tickets in the Western cities by Eastern lines. As this is a fruitful source of demoralization, can there not be some arrangement made for putting a stop to it?"—was protested against, and therefore nothing was done in the matter.

The meeting was enlivened by a discussion which is thus reported by the *Chicago Tribune*:

"Some of the subjects called for considerable discussion, especially those in regard to sale of round-trip tickets. While the subjects were being discussed, and the reformers mutually cursed, several good things were perpetrated. Mr. Daniels, the eloquent General Ticket Agent of the Wabash, had just made an able reform speech, in which he stated that if it were not for the assistance which the most brilliant and able general ticket agents in the country gave to scalpers, the latter could not carry on their business as successfully as they are now doing, when one of the members, who thought these remarks rather reflected upon him, rejoined that the appearance of the Wabash in the rôle of reformer reminded him of a notable passage in an ancient Arabic manuscript, which began, like Faust, with a prologue, in which, after recounting the assembling of the Sons of God, it is added, 'And Satan came also.' This sally caused great merriment, but Mr. Daniels, nothing daunted, shortly afterward let off a strong reform speech against the Eastern trunk lines sending return portions of return tickets to be placed on sale in scalping offices in St. Louis, whereupon Mr. H. C. Wentworth, of the Michigan Central, remarked, much as he disliked to repeat the language of the gentleman who had referred to the Arabic manuscript, still he felt compelled to announce that from all the information and evidence he had these return tickets to which Mr. Daniels objected were placed on sale by Wabash agents, and read exclusively over the Wabash Line. Mr. Daniels emphatically disclaimed all knowledge of this, and expressed complete innocence on his part of being involved in any such transactions as far as he was concerned or knew. The gentleman who had previously referred to Satan then got in his work again, and dwelt upon the innocence of general passenger agents in general, and of the Wabash agents in particular. He explained elaborately how ticket agents of several lines in combination with him had played tricky games, while their general passenger agents remained in total ignorance about what they were doing and declared themselves entirely innocent of any complicity in these acts. There was a good deal of fun of this kind during the afternoon, and one of the most brilliant and able general passenger agents from the South refused to believe that general passenger agents were half as innocent as represented by the gentleman who made the quotation about Satan."

The meeting finally adjourned, to meet again at Indianapolis on the second Wednesday in November.

THE SCRAP HEAP.

Locomotive Building.

The new corporation organized under the name of the Bordentown Locomotive Works has taken formal possession of the old Camden & Amboy shops at Bordentown, N. J., under the lease from the Pennsylvania Railroad Company. Work has been begun clearing out the shops and preparing them for use. The officers of the company are: Samuel B. Dougherty, Superintendent; A. M. Cummings, Secretary; Joseph Weis, Master Mechanic. Mr. Dougherty was formerly Master Mechanic of the Camden & Amboy road.

The Baldwin Locomotive Works, in Philadelphia, continue full of work. Recent orders received include one from the Baltimore & Delta road.

Car Notes.

The Wabash, St. Louis & Pacific has just put on its line, to run between Kansas City and St. Louis, a new Pullman palace sleeping-car, which excels anything that has yet been produced in this line by Mr. Pullman. The name of the car is Bremen. Its interior is magnificently finished in light woods, highly illuminated in tasteful designs. At one end is a family room and at the other a bridal chamber, both furnished in the highest style of modern art and provided with all modern improvements. A new feature of these rooms is that instead of berths they are provided with regular beds, chairs, lounges, etc.

The works of the St. Louis Car Wheel Co., in St. Louis, are being enlarged.

Billmyer & Smalls, at York, Pa., are building two passenger cars for the new Baltimore & Delta road. Three more are to be built by the Jackson & Sharp Co., at Wilmington, Del., for the same road.

The Ohio Falls Car Works, at Jeffersonville, Ind., recently delivered four passenger and two baggage cars to the Chicago, St. Paul, Minneapolis & Omaha road.

Bridge Notes.

The firm of Cunningham & Keepers, of the Milwaukee Bridge and Iron Works, was dissolved Aug. 1, by mutual consent. Messrs. W. H. Keepers and A. F. Riddell have formed a copartnership under the firm name of Keepers & Riddell, and will continue the business.

Clark, Reeves & Co., of Phoenixville, Pa., have lately taken orders for a draw-span 350 ft. long for the Oregon Railway & Navigation Co.; 28 spans, 3,800 lineal feet in all, for the Galveston, Harrisburg & San Antonio, and a number of small bridges for the Mexican National road.

C. C. Smith, of La Crosse, Wis., has the contract for the bridges on the new Chippewa Valley & Lake Superior road.

Iron and Manufacturing Notes.

The Lookout Rolling Mill, at Chattanooga, Tenn., has lately made many improvements and additions. They are running full double turn, with much work on hand.

The Tanite Co., at Stroudsburg, Pa., has received a bronze medal for its emery wheels exhibited at the Sydney International Exhibition of New South Wales. The Tanite Co. also recently received an award for its goods shown at the International Exposition at Geneva, Switzerland.

The Cambria Iron Co., at Johnstown, Pa., is to furnish the steel rails (40 lbs. to the yard) for the new Baltimore & Delta road.

Blackmer & Post, of St. Louis, have lately received orders for 13 car-loads of culvert pipe from 12 to 24-in. diameter from the Marquette, Houghton & Ontonagon road; the Detroit, Lansing and Northern; the Kansas Central; the New Sharon, Coal Valley & Eastern; the Interstate Improvement & Construction Co., H. C. Moore, Chief Engineer, and the Pacific Railway Improvement Co., D. W. Washburn, Chief Engineer.

The old rail mill of the Joliet Steel Co., at Joliet, Ill., has been rebuilt and is now in operation.

Pequest Furnace, in Warren County, N. J., is to go out of blast for extensive repairs.

Merriman & Watson, of Pittsburgh, have bought the Crescent Iron Works at Pomeroy, O., and will start them up soon.

Two new engines are being put in the Laclede Rolling Mill at St. Louis. They are 700 horse-power, and are built by the Smith, Beggs & Rankin Machine Co., of St. Louis.

Prices of Rails.

Steel rails are unchanged and there is still a large demand for next year's delivery at from \$57 to \$60 per ton at mill. Several contracts for foreign steel rails are reported, including one at \$61.50 per ton delivered at New Orleans.

Iron rails are more quiet, but prices are firm at \$46.50 to \$47 per ton at mill for heavy rails, up to \$50 to \$52.50 for light sections.

Old iron rails are dull, but with somewhat higher prices. Philadelphia quotations are \$27 to \$28 per ton.

Spikes are steady at \$2.75 per 100 lbs.; fish-plates, \$2.30 to \$2.40; track-bolts, \$3.25 to \$3.75, according to specification.

Borings.

Traveler—"How do you brokers manage to undersell the railroad companies?" Scalper—"Well, you see we don't got so much expenses. Dose railroad fellers haf to keep up the rollin' stock an' pay ze hands. We don't. It's all clear profit mit us."—*New York Graphic*.

A tramp with his arm in a sling called on Gilhooley for a quarter, alleging that his arm had been injured in the recent railroad accident near San Antonio. "But yesterday you had the other arm in a sling," replied Gilhooley. "Well, supposing I had. Don't you think a feller's arm gets tired of being tied up all day? Besides, I have got concussion of the brain, and can't remember half the time which arm was broken."—*Galveston News*.

A Kentucky Episode.

In the smoking-car of one of the Kentucky Central trains last week sat a traveling man connected with one of our prominent Fourth street houses, and the proprietor of a well-known Kentucky hostelry. They were enjoying a couple of freshly-lighted Havanas, when their attention was attracted by the conductor, Captain Winston, remarking:

"I beg pardon, madam, but your dog will have to go in the smoking-car."

"All right! I'll go in with him then," was the reply which came from rather a nice-looking old lady, who, to judge from appearances, was evidently not used to the ways of the road. She, however, proposed to make herself at home, and, sitting down in a seat opposite to our traveling man and his companion, leisurely proceeded to extract from the folds of her dress a short, black pipe, which, having filled with "long green," she seemed at a loss for a light. Her distress was too much for the gallantry of Captain Winston, who, turning to the Bourbon County man, asked him to assist the old lady out of her dilemma. He quickly responded, of course, and offered her his cigar. She was seemingly non-plussed for the moment, but recovering, accepted, thanked him for his kindness, and, returning the pipe to her pocket, puffed away at the Havana with considerable satisfaction, and watching the blue rings float through the window with the utmost tranquility.

It is needless to say that the joke was enjoyed immediately by the passengers who had been watching the affair, and who gave vent to their feelings in uproarious laughter, much to the chagrin of the polite Kentuckian.—*Cincinnati Enquirer*.

A Railroad Exploring Expedition.

The Northern Pacific Railroad Company and the Oregon Railway & Navigation Company have united in putting a scientific exploring expedition into the field for the purpose of examining into the mineral, agricultural and other resources of the territory tributary to the two companies, between Lake Superior and the Pacific coast. Prof. Raphael Pumpelly, until now in charge of the coal and iron department of the last National Census, has been appointed chief of the expedition. The several parts of the field of operations will be explored by separate parties under the chief direction of Professor Pumpelly. He has already started for Montana for the examination of the principal mining districts in that territory. The work of the expedition will extend through several years.

The Main Centennial Building.

The building known as the Main Building at the Centennial Exhibition, which has since been used by a Philadelphia company in an unsuccessful attempt to establish a permanent exhibition, has been sold to W. C. Bullitt, of Philadelphia, who was reported to be acting for the Pennsylvania Railroad Company. It is to be removed from the grounds. The price paid was \$97,000.

Safe Methods of Heating Cars.

The district superintendents of railway mail service, who are now holding their yearly conference in Washington, have appointed a committee to consider some plan for warming postal cars by which all danger of fire, in case of an accident to the train, may be avoided. They are to consider all plans which may be presented.



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CONTENTS.

ILLUSTRATIONS:	Page.	GENERAL RAILROAD NEWS:	Page.
Pennsylvania Railroad Standard Passenger Car—Inside Finish.	450, 451	Train Accidents in July.	449
EDITORIAL:		Western Association General Passenger and Ticket Agents.	453
The Chicago & Northwestern Report.	454	ANNUAL REPORTS:	
Grain Movement for Seven Months.	454	Chicago & Northwestern.	462
New York and Baltimore Rates.	455	Savannah, Florida & Western.	461
July Earnings.	456	MISCELLANEOUS:	
July Accidents.	456	Pennsylvania Railroad Standard Passenger Car.	451
Crops.	456	Mr. Blanchard on the Situation.	452
Record of New Railroad Construction.	457	Line Agents and Rates.	452
EDITORIAL NOTES:	457	The American Society of Mechanical Engineers.	452
GENERAL RAILROAD NEWS:		The Rye Collision on the New York, New Haven & Hartford.	453
Meetings and Announcements.	458	Paying Locomotive Engineers—The Premium System.	458
Elections and Appointments.	459	The Best Laying for Locomotive Boilers.	458
Personal.	459		
Traffic and Earnings.	459		
The Scrap Heap.	459, 460		
Old and New Roads.	460		

EDITORIAL ANNOUNCEMENTS.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particularly as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

THE CHICAGO & NORTHWESTERN REPORT.

At the beginning of the fiscal year which ended with May, 1881, the Chicago & Northwestern Railway Company worked 2,513 miles of railroad; at its close, 2,778 miles. All the additions made during the year it owns directly or indirectly. Its vast mileage of proprietary roads are virtually its property. It is liable for all their debts and gets all their profits and works them directly with a single general staff. At the close of the last year it leased and paid rent for the line across Iowa from Clinton to Council Bluffs and the Maple River branch of same, in all 488½ miles of road, in which it has no proprietary interest, we believe. There are 228 miles of other branches of companies in which it owns more than half of the stock, but not the whole, as is the case of the "proprietary roads."

But the increase in property owned inventoried at the end of the year amounted chiefly to 262 miles of railroad (152½ of it in Dakota and 75 in Iowa), 51 locomotives and 3,419 cars of different kinds. With this there is an increase of \$230,661 in capital stock outstanding and of \$6,871,000 in the funded debt. All the new bonds but \$510,000 5 per cents. bear 6 per cent. interest, and the addition makes the yearly fixed charges \$417,500 greater, which will be covered by an average profit of about \$1,600 per mile on the new road. As there is a good deal of new road under construction, however, to pay for which new bonds are issued as required, the present condition is not represented exactly by the figures for the 31st of May given in the report.

The average mileage worked, the gross and net earnings, expenses and charges for the whole system worked have been, for six successive years:

Year to May 31.	Miles worked.	Gross earnings.	Expenses and taxes.	Net earnings.	Fixed charges.*
1876.....	1,992	\$14,013,732	\$8,274,390	\$5,739,342	\$4,718,327
1877.....	1,993	13,035,102	7,536,101	5,507,001	4,578,059
1878.....	2,037	14,751,063	7,620,946	7,130,117	4,965,630
1879.....	2,129	14,580,921	7,707,649	6,873,272	4,585,644
1880.....	2,216	17,349,349	8,431,600	8,917,749	4,837,581
1881.....	2,644	19,344,072	10,425,821	8,908,251	5,130,749

*Including sinking funds and rentals as well as interest on bonds.

There has been an increase of mileage from year to

year, but it was only last year that this was large. Then it was as much as 428 miles, or 19 per cent.

There has been an increase of earnings in the last two years, which was very large in 1879-80, but much less last year, in spite of the much greater increase in mileage—\$1,985,000 or 11½ per cent., which, if due wholly to this new road, would show average earnings per mile of \$4.634. These, however, would be extraordinarily large earnings for new road in new country, as nearly all the acquisitions of this company last year are. But from 1879 to 1880 the average earnings per mile increased from \$6,848 to \$7,830; from 1880 to 1881 this decreased from \$7,830 to \$7,312. The decrease, as we have just shown, is not at all a sign of bad traffic; on the contrary, with all the new line added, the earnings per mile have been remarkably good. But the figures do show a most astonishing increase from 1879 to 1880, the latter being extraordinarily large, though in most of the country which the Northwestern serves the crops were not extraordinarily good that year.

The satisfactory earnings of last year, however, were neutralized by the exceptionally heavy expenses; these increased 24 per cent. while the increase in earnings was but 11½ per cent. and the increase in traffic 14½ per cent. (17.3 in passengers and 13.2 in freight.) To any one who remembers last winter no explanation is needed. From November to May it was almost a continuous fight with the elements, in which on some of the newer lines for weeks at a time the elements came out ahead. And as we have repeatedly shown of late, not only were expenses increased by this long winter and late opening of spring, but traffic which otherwise would have been carried in the fiscal year under consideration was postponed until the current fiscal year, and has swelled the June and July earnings of this road and others similarly situated. The gross increase in expenses was greater than that in receipts, so that there was a trifling decrease in net earnings (\$9,500), and as the interest on the cost of the new road swelled the fixed charges, the surplus which is the stockholders' income (whether divided or not) fell from \$4,080,168 to \$3,777,502, or 7.4 per cent.; as, however, this surplus was sufficient to pay 6 per cent. on the common and 7 per cent. on the preferred stock, and still leave a surplus equal to 8½ per cent. on the whole stock, the shareholders must consider it a very prosperous year.

The surplus of profits over fixed charges, the gross amount paid in dividends, the surplus after paying dividends, the rate of dividend paid on the two classes of stock, and the average net earnings per mile of road worked have been in each of the past six years:

Year to May 31.	Profits over fixed charges.	Amount divided.	Surplus.	Rate of Div. Com.	Div. Pref.	Net per mile.
1876.....	\$1,026,115	\$536,810	\$1,026,115	24	24	\$2,881
1877.....	928,342	508,433	391,532	24	24	2,763
1878.....	2,464,487	1,956,034	508,453	3	7	3,500
1879.....	2,287,628	2,105,898	181,730	4	7	3,228
1880.....	4,080,168	2,405,521	1,674,647	6	7	4,025
1881.....	3,777,502	2,420,273	1,357,229	6	7	3,369

The first column shows the stockholders' income. They get the benefit of it whether it is divided or not. In 1880 this was equivalent to 11¼ per cent. on all the stock outstanding; in 1881 to 10¼ per cent.

We have no longer any separate account of the earnings and traffic of the several proprietary roads; reports of them would be valuable, but not more so than of the other separate lines that go to make up this vast system of railroads. They are as much a part of it as if they were consolidated with it. The severe winter, however, most affected the lines in Minnesota and Dakota and the new lines generally much more than the older parts of the system, and a decrease of earnings coupled with an increase of expenses would not be surprising for those lines. Not all the proprietary roads, however, are in that category.

The progress of the traffic of the road is shown below:

Year to May 31.	Miles worked.	Passenger miles.	Ton miles.	Av. rate per mile. Per pass.	Per ton.
1874.....	1,923	109,134,533	461,412,039	3.40	2.40
1875.....	1,990	116,779,137	454,550,357	3.00	2.12
1876.....	1,992	122,281,908	503,132,389	2.85	1.95
1877.....	1,993	116,902,435	485,357,900	2.80	1.86
1878.....	2,037	118,877,406	623,768,593	2.83	1.72
1879.....	2,129	116,068,482	681,878,311	2.79	1.56
1880.....	2,216	149,116,864	865,908,542	2.67	1.40
1881.....	2,644	164,333,508	980,622,774	2.53	1.47

Thus traffic of both descriptions stood almost stationary for the four years from 1874 to 1877, inclusive, and passenger traffic for two years longer. In 1877-78, with an insignificant increase of mileage, there was an increase of 28 per cent. in the freight traffic; the next year the increase was but 9 per cent., in 1879-80 it was no less than 27 per cent., and the last year 13.2 per cent. But the increase in passenger traffic in the last two years has been one of the most significant signs of the times for this road, because it is very largely due to immigration into the new country which it serves. Though for six years there had been scarcely any

change in the passenger traffic, and it was actually smaller (with a larger mileage) in 1878-79 than in 1874-75, there was an increase of 20 per cent. from 1879 to 1880, and of 17¼ per cent. from 1880 to 1881. Rates continue to fall, but freight rates much more slowly than heretofore. The large decrease in the average passenger rate is probably due to the fact that a large part of the traffic was of immigrants carried at low rates. If we divide the expenses in proportion to the passenger and freight train mileage, we will find there was an increase from 1.90 to 1.973 cents in the cost per passenger per mile (allocating no part of the expense to other passenger-train earnings), and from 0.667 to 0.724 cent in the cost per ton per mile, which, considering the terrible winter, was a remarkably favorable result. But there was a small increase in the average train loads—a slight one even in the average freight train load, which had winter weather frequently reduces one-half.

The company has now, we believe, no plans for constructing considerable extensions of its system in the immediate future, though it has a good deal of work now under way, most of which, however, is in the comparatively old states of Wisconsin and Iowa, and comparatively little in the unsettled districts of Dakota, where it has built a good deal of road within the past two years.

The new lines in Dakota are well placed and are sure some day to have a considerable traffic (unless new lines shall be built too close to them). But the profits of the road for the next two or three years will be considerably influenced by the rapidity with which the country on the new lines is settled and put under cultivation. For two or three years the growth has been very rapid, but it has been somewhat checked this year, in spite of the larger foreign immigration.

There are general causes at work all over the country to reduce somewhat the growth of agricultural population, but special causes have affected the Northwest. The crop last year was indifferent, which might not have made much difference, but the terrible winter has doubtless had greater effect, and discouraged some who otherwise would have settled in Minnesota and Dakota. This is indicated by the very moderate increase of acreage under cultivation in Minnesota (4.6 per cent.).

However, even with a slower rate of growth, the increase in population and production may be quite rapid. The crops on the new lines this year, so far as we can learn, are about as good as last year, and the present prices will make them a good deal more profitable.

It should be remembered, however, that it is increase of profits, not the maintenance of them as they are, that depends on the growth of this new country, which, in any event, cannot for many years contribute more than a small fraction of this company's total profits. The new lines are mere outliers and feeders of a vast system which is for the most part in a well peopled, wealthy and extremely prosperous country, with a great variety of industries.

THE GRAIN MOVEMENT FOR SEVEN MONTHS.

Receipts and shipments of grain of all kinds at the eight reporting Northwestern markets, and receipts at the seven Atlantic ports for the first seven months of the year ending with July have been, in bushels for the past eight years:

	Northwestern receipts.	Northwestern shipments.	Atlantic receipts.
1874.....	102,307,378	77,508,339	64,590,165
1875.....	74,423,302	59,620,039	69,244,536
1876.....	99,507,509	81,314,078	94,280,285
1877.....	70,885,925	60,692,553	87,008,417
1878.....	111,414,640	92,333,058	128,886,885
1879.....	117,264,435	101,798,790	145,178,796
1880.....	149,122,971	128,446,532	168,676,786
1881.....	131,770,826	114,956,531	136,870,833

Before drawing conclusions from the fluctuations in these receipts and shipments from year to year, we will do well to consider the flour movement. This varied comparatively little from year to year until this year, when it has increased enormously. Thus, for five successive years the numbers of barrels moved in the seven months were:

	Northwestern Receipts.	Northwestern Shipments.	Atlantic receipts.
1876.....	3,021,516	3,232,019	5,276,512
1877.....	2,325,693	2,599,018	3,705,825
1878.....	3,278,945	3,356,395	4,851,106
1879.....	3,744,939	3,974,523	5,674,210
1880.....	5,391,313	5,208,736	5,206,962
1881.....	5,118,151	5,104,063	7,556,195

Take the Atlantic receipts as the most completely representing the whole movement. The bad crop of 1876 resulted in a very large decrease, but the splendid crop of 1877 did not yield as much flour as that of 1875 (marketed in the first seven months of 1876). There is an increase in 1879, which yet made the flour receipts not 8 per cent. more than in 1876, though amount of wheat marketed in 1879 was immensely greater. There was a decrease of 400,000 barrels (7 per cent.) from 1879 to 1880, though 21,200,000 bushels

(30 per cent.) more wheat was received in the latter year; but from 1880 to 1881 we have an increase of 2,283,000 barrels (43 per cent.) in flour, with a decrease of 7,450,000 bushels (12½ per cent.) in wheat. The increase in flour is equivalent to 10,273,000 bushels of wheat, and so exceeds the decrease in that grain, but still leaves a decrease of 27,000,000 bushels, or 14 per cent., in the aggregate Atlantic receipts of flour and grain of all kinds.

Taking grain alone, the first table shows that the receipts of the eight reporting Northwestern markets have been about 12 per cent. less than last year, but larger than in any previous year; that their shipments show a similar change; but that the Atlantic receipts have been nearly 30,000,000 bushels, or 18 per cent., less than last year, and 8,000,000 less than in 1879, and only 8,000,000 greater than in 1878, though there has been an increase of 22,600,000 bushels in the Northwestern shipments over that year. There has been evidently this year a great decrease in the shipments from interior Western points that do not pass through or report at any of the eight great markets. For many years, and until quite recently, the Northwestern grain was nearly all marketed at Northwestern markets; since the railroads began to carry a large part of the grain through, this has been changed, but in the last two years there has been a reaction, as will be seen from the following table, which gives the excess of Atlantic receipts over Northwestern shipments for the seven months each year:

Year.	Bushels.	Year.	Bushels.
1874.....	7,081,836	1878.....	36,533,827
1875.....	6,024,497	1879.....	43,380,006
1876.....	12,975,297	1880.....	38,230,254
1877.....	6,375,864	1881.....	21,914,302

It is to be expected that when the rail rates are considerably higher than water rates a larger part of the grain will go to the lake and river ports to be shipped; and this may account for the decrease of 5,000,000 bushels in the excess of Atlantic receipts over reported Northwestern shipments last year, when rail rates were comparatively high, and navigation was open a month earlier than usual. It does not account for the greater difference this year, however; navigation opened late, and more than half the time since rail rates have been very low. But there is something beside this difference of rates which affects the shipments to lake and river ports. A very large part of the country east of the Mississippi and south of Burlington, Peoria and Lafayette cannot ship so directly by way of any of these markets as by railroads straight to the East. When this country is full of grain, as it has been for the past three years, it sends enormous quantities directly to New York, Philadelphia and Baltimore, of which no record is had till they arrive at those ports. It had a great crop last year, but it was chiefly wheat, and was mostly marketed before the beginning of this year.

The receipts of each of the eight reporting Northwestern markets, and the percentage of the total arriving at each, have been as follows:

	1881		1880
	Bushels.	Per cent.	Bushels.
Chicago.....	60,074,532	46.5	68,331,322
Milwaukee.....	9,297,825	7.2	8,208,506
Toledo.....	13,555,556	10.5	18,750,012
Detroit.....	3,906,502	3.1	4,142,635
Cleveland.....	2,706,028	2.1	3,030,451
St. Louis.....	24,407,408	18.9	27,337,573
Peoria.....	14,944,555	11.5	13,612,515
Duluth.....	222,165	0.2	1,385,731
Total.....	129,174,571	100.0	144,798,747

There is a decrease of nearly 11 per cent. in the total receipts of these markets, but its distribution is not much different from what it was last year. Milwaukee has a considerably larger percentage, and Toledo a considerably smaller one, and Peoria has a considerably larger proportion, while it and Milwaukee are the only places that have received a larger quantity than last year. St. Louis' percentage is precisely the same as last year; but until July it had a larger one. Chicago has gained largely in July, which no other place has done; but Chicago had its receipts and its proportion of the total receipts greatly reduced in the first five months of the year. It has been making up for it since, while the other places have not made much progress. We will see this by comparing the average weekly receipts down to May 18 with those since, at each place:

	Jan. 1 to May 28		May 29 to July 30
	Bushels.	P. c.	Bushels.
Chicago.....	1,208,344	36.2	3,855,479
Milwaukee.....	253,207	7.6	442,274
Toledo.....	406,140	12.2	558,513
Detroit.....	147,782	4.4	63,897
Cleveland.....	89,423	2.7	102,017
St. Louis.....	753,054	22.5	954,809
Peoria.....	480,060	14.4	540,365
Duluth.....	24,685
Total.....	3,338,010	100.0	6,564,039

Thus while the average aggregate weekly receipts were not quite twice as great in the last two as in the five previous months, Chicago's receipts were more than three times as great and its proportion was 58.7 per cent. of the whole, having been but 46.5 before. Most

of the other places gained something in quantity, but they all lost in percentage, and some of them immensely. St. Louis had had 22.5 per cent. of the whole down to end of May, since it has been but 14.6 per cent. So there are losses in percentages at Toledo and Peoria, Milwaukee losing but little. Down to the end of May Chicago had received a total of 25,375,221 bushels; in June and July it received 34,700,000 bushels; but St. Louis, which had received 15,814,126 by the end of May, has received but 8,593,282 bushels since.

It is customary now to charge all variations from the ordinary course of traffic to the low rail rates. But these have had little or nothing to do with the diversion of traffic from St. Louis, and certainly nothing to do with the large Chicago receipts. It is an advantage to St. Louis to have rail rates as low as lake and canal rates, because then Chicago has not the advantage of the cheapest outlet. And it is decidedly a disadvantage to Chicago to have the rail rates very low, for these prevent grain from places a little south of its latitude from going to Chicago at all, because their direct rail outlet, then as cheap as the lake, passes to the south of that city. The true cause of the heavy receipts at Chicago is that the grain came from country which has its most direct all-rail outlet by way of Chicago, and that the usual winter and spring shipments from this country had been prevented by the severe winter and the late spring, as we have pointed out before. That the low rail rates have not been peculiarly favorable to the Lake Michigan ports may be shown by the fact that in June, before they had had time to take effect on farmers' shipments, the average weekly receipts of Chicago and Milwaukee were 4,580,000 bushels, while in July, in the whole of which the 15 cent rate had full effect, their average was but 3,624,000 bushels.

Let us turn now to the receipts of the several Atlantic ports; bushels and percentages of the total are given below for the seven months ending with July for six years past:

	1876.	1877.	1878.
New York.....	38,280,384	26,144,040	59,543,635
Boston.....	6,845,151	6,651,095	10,503,030
Portland.....	1,585,142	730,593	1,466,509
Montreal.....	5,908,133	3,783,778	5,672,148
Philadelphia.....	17,904,950	8,513,840	21,880,110
Baltimore.....	17,177,724	15,422,084	21,821,500
New Orleans.....	3,948,038	4,879,251	7,977,997
Total.....	91,739,522	67,124,592	128,865,838
	1879.	1880.	1881.
New York.....	61,480,527	75,359,383	63,115,700
Boston.....	11,310,370	13,253,101	13,278,835
Portland.....	1,008,579	1,719,780	1,198,617
Montreal.....	5,329,453	6,802,648	5,479,883
Philadelphia.....	26,063,180	27,822,735	14,905,555
Baltimore.....	31,260,380	29,320,441	23,773,570
New Orleans.....	7,427,965	12,447,400	13,583,173
Total.....	144,478,074	166,725,488	135,365,333

While the total Atlantic receipts this year have been 31,360,000 bushels less than last year, and 9,100,000 less than in 1879, New York has received 12,000,000 bushels less than last year, and 1,665,000 more than in 1879; Boston has received about the same as last year and 2,000,000 bushels less than in 1879; Montreal has about the same as in 1879 (navigation opening late that year and this), but a fifth less than last year; Philadelphia received 12,900,000 bushels less than in 1880 and 11,700,000 less than in 1879—indeed, less than in any other year of the six reported except 1877, when the total receipts were but half as great. Baltimore has received 5,500,000 bushels less than last year, and 7,500,000 less than in 1879. New Orleans shows an increase of 1,100,000 bushels over 1880, and of 6,500,000, or 87 per cent., over 1879. But the table of percentages will show the relative position of the several places exactly:

	1876.	1877.	1878.	1879.	1880.	1881.
New York.....	41.8	39.0	46.2	42.6	45.2	46.0
Boston.....	7.5	9.9	8.2	7.8	7.9	9.8
Portland.....	1.7	1.1	1.1	0.7	1.0	0.9
Montreal.....	6.5	5.6	4.4	3.7	4.1	4.0
Philadelphia.....	19.4	12.7	17.0	18.5	16.7	11.0
Baltimore.....	18.8	23.0	16.9	21.6	17.6	17.7
New Orleans.....	4.3	7.2	6.2	5.1	7.5	10.0
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

Here we see that New York has received a larger proportion of the whole this year than in any other of the six, and so has Boston, with the exception of 1877; so of course has New Orleans, whose business, therefore, seems not to have been taken from the more northern ports. Philadelphia has a much smaller percentage than in any other year, the reason for which we do not see, as it receives from nearly all the country that supplies Baltimore, and, indeed, the Pennsylvania Railroad carries to Baltimore a very large part of its total receipts. Philadelphia, indeed, loses enough to give gains to nearly every other place.

Comparing the percentages of New York with those of Philadelphia and Baltimore together, we have:

	1876.	1877.	1878.	1879.	1880.	1881.
New York.....	41.8	39.0	46.2	42.6	45.2	46.0
Philadelphia & Baltimore.....	38.2	37.2	33.9	40.1	34.3	28.7

The three cities..... 80.0 76.2 80.1 82.7 79.5 75.3
The two Southern ports thus have a much smaller

proportion of the business this year than in any other. They had their largest in 1879, when rail rates were lower than ever known, and their next largest in 1876, when there was a bitter railroad war from April 23d throughout the year.

Comparing the percentages of New York and Boston together with those of Philadelphia and Baltimore, we have:

	1876.	1877.	1878.	1879.	1880.	1881.
N. Y. and Boston.....	49.3	40.9	54.4	50.4	53.1	56.4
Phila. and Baltimore.....	38.2	37.2	33.9	40.1	34.3	28.7

The four cities..... 87.5 78.1 88.3 90.5 87.4 85.1
Thus the two northern ports, which in 1876 received but 30 per cent. more, and in 1879 but 26 per cent. more than the two southern ones, this year have received nearly twice as much.

The railroad war affected Atlantic receipts this year only during July. It is not probable that it has affected the distribution of the grain much, though, as it has vastly diminished the canal movement, it might be expected to reduce the New York receipts. But during four June weeks New York receipts were 50.9 per cent. of the whole, against 55.4 per cent. in four July weeks, the canal being open in both months. Both Baltimore and Philadelphia had a larger percentage of the receipts in July than in June, however. Both these places seem to have had their receipts diminished by the shipments down the Mississippi, though these have been but little greater than last year. With regard to them, it should be noticed that the New Orleans receipts were much less in July than in any other month of the year since the river opened in February, but still about the same as last year, when higher rail rates greatly favored river shipments.

Nearly the whole of the immense increase in flour receipts has been at New York and Boston, and if these were included these two ports would show a considerably larger increase in their percentages of the total receipts than is given above for grain alone.

The failure of the winter wheat crop is in a district drained by the Pennsylvania and the Baltimore & Ohio more than by any other roads, and we should expect it to affect the receipts of Philadelphia and Baltimore more than those of other cities, and especially in August and the following months, when wheat receipts have been large at those places for the past three years. We shall not be surprised to see their reduced percentages still further lessened this year.

New York and Baltimore Rates.

The effect of an apportionment on the New York traffic has been recently discussed by several newspapers, most of which assume that under it New York has had a smaller proportion of the traffic than if competition had been unlimited. It would help greatly in discussions of such questions if those who make such statements would give the facts on which their conclusions rest. They not having done so, we will give some of the results under different policies. The largest east-bound traffic is grain and flour. In 1876 there was the first great fight over this traffic, the declared object being to prevent diversion of traffic from New York to Philadelphia and Baltimore. In that year New York received 45.8 per cent. of all the grain and flour received at the five Eastern ports, while Philadelphia and Baltimore had 34.5 per cent. In 1877 the roads agreed upon the differences in the rates to the several ports, and there was little or no fighting for the business; but in that year New York had 50.3 per cent. of the whole—4.5 more than in the year of war—and Philadelphia and Baltimore only 31.3—3.2 less. In 1878 the two southern ports had about the same proportion of the whole. In 1879, when for the first seven months of the year the fight for traffic was most severe, New York had 49.1 per cent. of it, and Baltimore and Philadelphia 34.3. In 1880, when rates were well maintained throughout the year, New York had 49.5 per cent. and the other two places 32.1. In successive years the percentages of New York and of Philadelphia and Baltimore taken together have been:

	1875.	1876.	1877.	1878.	1879.	1880.
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New York.....	52.3	45.8	50.3	52.1	49.1	49.5
Philadelphia & Baltimore.....	27.9	34.5	31.3	31.5	34.3	32.1

Now, in 1876, the war and the low rates resulted in giving New York the smallest and Philadelphia and Baltimore the largest proportions of this traffic they have ever had. Next to it stands 1879, when the rates were even lower, but the contest did not last so long. This year until July rates were generally maintained, and in it New York has had nearly as large a proportion of the grain as ever before, but Philadelphia and Baltimore the smallest proportion since they fairly began to compete for the grain.

As the various ports are sure of receiving what they need for consumption, the competition is limited substantially to the export grain. Now let us see how the years of the severest competition have compared with those when rates were generally maintained, or at

least there was no great struggle. Now, in 1876, the fight being fierce, compared with 1875

New York increased exports..... 4,813,757 bushels,
But Philadelphia and Baltimore increased..... 26,523,818 "

Again, rates have been very low $7\frac{1}{2}$ months in 1879, but have been comparatively high and well maintained in 1880; in this latter year, compared with 1879

New York gained..... 10,853,868 bushels,
But Philadelphia and Baltimore lost..... 5,088,290 "

Does this look as if a railroad war was good for New York? The first one, in 1876, resulted in Philadelphia and Baltimore getting a really large business for the first time in their existence. The whole business being much larger, they gained five and a half times as much as New York. If things had gone on at that rate till now, both of these places would have surpassed New York in grain exports by this time. Then the transformation from war in 1879 to peace and remunerative rates in 1880 resulted in a gain to New York and an absolute loss to the other two places.

And there is an excellent reason for this. When the rail rates are high, and, indeed, whenever they are not unprofitably low, the Erie Canal makes it cheaper to ship grain to New York than to the other two places, which have only rail communication with the West; but when rail rates are about as low as canal rates, then the end of the cheapest route to the sea is at Baltimore. For instance, when the rail rate was 30 cents, or 18 cents a bushel, from Chicago to New York, and consequently 27 cents, or 16.2 cents a bushel, to Baltimore, it cost about 11 cents to send wheat to New York by canal. Now, when the rate is 15 cents to New York and 12 cents to Baltimore, the rail rate to the latter is but 7.2 cents a bushel, which is rather lower than the present lake and canal rate to New York. It happens just now that there is very little grain in the country which can ship conveniently to Baltimore, but under ordinary circumstances this condition would give Baltimore an unusually large proportion of the traffic.

Under the policy of agreed differences which followed the railroad war of 1876, the grain export traffic of these three cities has made the following progress, the figures showing the gain in bushels of 1880 over 1876:

	Bush.
New York has gained.....	70,704,642
Philadelphia has gained.....	9,877,847
Baltimore has gained.....	26,196,108
Phila. and Baltimore have gained.....	36,073,955

Now this is a kind of discrimination that New York can stand a great while, since it gives it more than two bushels of grain to every one gained by its two rivals.

In the matter of west-bound freights we are unable to quote figures, but we are informed by those who have access to the records, that since the first year of the pool of this traffic, which went into effect July 1, 1877, while the whole gain in shipments has been very large, almost the whole of it has been at New York and Boston, Philadelphia and Baltimore making very little progress.

It would seem then that the differences allowed by the agreement of 1877 have been followed by a growth of traffic which has been much larger at New York than elsewhere. Unless New York objects to the doing of any business at Philadelphia and Baltimore, it is hard to see how it can object to the differences in rates under which it has prospered so greatly.

July Earnings.

July earnings, so far as reported, do not show increases so uniformly as in previous months. Nine out of 46 roads show a decrease in total earnings, and 18 in earnings per mile. The average earnings per mile, however, increased nearly 5 per cent. The Northwestern roads, whose traffic was badly interrupted in winter and spring, show in July a continuance of the very large increases which they had in June, and which we called attention to a month ago as being largely the effect of what may be called "deferred" traffic. Below we compare their gains in July and June with their average monthly increase or decrease in the previous five months of this year:

	July.	June.	Per month. Jan. to May 31.
Burlington, Cedar Rapids & North.....	\$30,918	\$52,534	D. \$7,550
Chic., Milwaukee & St. Paul.....	542,292	663,042	I. 195,890
Chicago & Northwestern.....	228,113	565,468	D. 19,453
Chic., Minn., St. P. & Om.....	127,685	186,148	I. 32,264
Illinois Central in Iowa.....	31,795	24,204	D. 8,158
Northern Pacific.....	162,903	115,171	I. 37,218
St. Paul, Minn. & Manitoba.....	115,399	161,915	I. 69,673
Total.....	\$1,239,005	\$1,800,482	I. \$399,893

Their gains in most cases were less in July than in June, but in every case much greater than before June—when they had any. In the aggregate their June increase was six times as great and their July increase four times as great as the average monthly increase of the previous five months. Indeed, for the whole five months it was but \$1,499,465, while in June alone it

was \$300,000 more, and in July only \$260,000 less. The presence of these roads with their large earnings does much to keep up the average of the whole number reporting. These seven roads have nearly half of the increase of the 46 roads, and the other 40 by themselves show very little increase in average earnings per mile—not more than $1\frac{1}{2}$ per cent. The Northwestern roads, in spite of an enormous increase of mileage in new country, show an increase in average earnings per mile in July from \$493 to \$492, or $1\frac{1}{2}$ per cent.

So far but few roads with a large proportion of through trunk-line traffic report. Their reports will be looked for with most interest, to trace in them the effect of the low rates. The Chicago & Grand Trunk, whose traffic is mostly of this class, shows a decrease of about 10 per cent. in earnings; the Cleveland, Columbia, Cincinnati & Indianapolis, a decrease of nearly 15 per cent.; but the Great Western of Canada has an increase of $6\frac{1}{2}$ per cent. The Indiana, Bloomington & Western has lost 19 per cent., the main line of the St. Louis, Alton & Terre Haute 18 per cent. (for the six months previous it had gained $14\frac{1}{4}$ per cent.) The Wabash, whose traffic east of the Mississippi is mostly subject to the through trunk-line rates, has provokingly changed its method of reporting just when a comparison would be most interesting. Heretofore it has reported the earnings last year of the lines which it works now but were worked by other companies then. Now it reports for last year only the earnings of the roads it worked then—less by 551 miles than it is working now. It has, however, made a statement of the earnings on the new plan for all the previous months of the year, and this shows that the gain of \$66,672 in July was much less than in previous months, and its average earnings per mile decreased from \$552 to \$457. It has, however, considerable new road and a large mileage beyond the Mississippi not affected by the railroad war.

By the time our monthly table appears we shall have reports from the Pennsylvania and the Northern Central, which will be more significant, though these roads have an enormous local traffic, which probably is much larger than last year. The Erie report for July is not due for a month yet, and its June report is but just issued. We notice that several managers have intimated that they are not suffering much from the railroad war after all. They may tell that to the marines. If it does not hurt them for through freights and fares to be cut down one-half, then the public has every right to demand that they shall stay down. They are losing at the rate of many millions of dollars a year in the aggregate, and the continuance of the rates will simply force the whole burden of the interest on the bonds and dividends on the stock (where any are paid) on the local traffic.

July Accidents.

Our record of train accidents, given in full on another page, shows for the month of July 102 accidents, whereby 38 persons were killed and 123 injured.

Of the 102 accidents 20 caused the death of one or more persons and 24 caused injury but not death, leaving 58, or 56.9 per cent. of the whole number, in which no injury to persons is recorded.

Compared with July, 1880, there was an increase of 24 in the number of accidents, of 17 in the number killed and of 22 in that injured.

These accidents may be classed as to their number and causes as follows:

COLLISIONS:	
Rear collisions.....	23
Meeting collisions.....	17
Crossing collisions.....	1
DERAILMENTS:	
Broken rail.....	3
Broken wheel.....	3
Broken axle.....	3
Broken truck.....	2
Broken bridge.....	1
Spreading of rails.....	1
Accidental obstruction.....	3
Cattle on track.....	8
Wash-out.....	4
Land-slide.....	1
Misplaced switch.....	2
Runaway.....	1
Flying switch.....	1
Malicious obstruction.....	1
Rail purposely removed.....	1
Switch purposely misplaced.....	1
Unexplained.....	19
Boiler explosion.....	58
Broken connecting rod.....	2
Broken wheel not causing derailment.....	1
Total.....	102

Eight collisions were caused by trains breaking in two; four by mistakes in or disobedience of orders, three by misplaced switches and one by fog. An unusual number of collisions are unexplained.

Of the two broken bridges one fell, apparently, because there was no reason why it should continue to stand; the other was a wooden bridge and had been weakened by fire.

There were 23 accidents which may be traced directly to defect or failure of equipment, and 6 to defective permanent way; 6 were caused directly by the elements; 11 were due to accidental obstructions not readily to be prevented; 35 should be attributed to carelessness, defective discipline or

faults of management; 8 were maliciously caused and 19 were unexplained. It is not, perhaps, unfair to say that a large part of these unexplained derailments were probably due to defects of permanent way.

It is hardly possible to make a closer or more accurate classification than that given above in the absence of official statements or similar means of securing full accounts. A division into accidents that could (and ought) to have been prevented and those that, in the nature of things, are unavoidable, would be desirable, but would hardly be possible, even with more accurate accounts than those from which our record is made up. Of certain classes of accidents a definite judgment can be formed. A misplaced switch, for instance, indicates at once carelessness and probably defective discipline; but it is impossible always to say whether an accident caused by a broken wheel, by a broken rail or a boiler explosion could have been prevented by greater care or more thorough inspection. Doubtless in many cases such accidents might have been prevented, but there are many in which a definite judgment cannot be formed.

July was not an especially unfavorable month as far as the weather was concerned. There were heavy rains in some parts of the country, as is to be expected at this season, but over a large part of the country the month was unusually free from those violent storms, which often cause disaster. The month was fortunately free from those accidents to crowded excursion trains which in some past years have so terribly swelled the number of casualties, and no very serious accident is recorded.

One curious double collision may be noted, in which a train was struck almost at the same moment by two other trains, each moving in a different direction.

Misplaced switches caused three collisions and two derailments, five accidents in all, an unusually small number, but still too large for the credit of our roads.

Train-wreckers tried a variety of means this month, one of the malicious derailments having been caused by an obstruction on the rails, one by a purposely misplaced switch, and one by a rail removed from the track.

A division according to classes of trains and accidents was as follows:

Accidents:	Collisions.	Derailments.	Other.	Total
To passenger trains.....	4	17	2	23
To a pass. and a freight.....	7	7	1	15
To freight trains.....	30	39	3	72
Total.....	41	56	5	102
Casualties:				
Killed by.....	19	18	1	38
Injured by.....	38	80	4	122
Total.....	57	98	5	160

As to time there were 66 accidents during the hours of daylight, 34 at night, and in only two cases the time is not definitely fixed.

For the year ending with July the record is as follows:

	Number of accidents.	Killed.	Injured.
August.....	112	49	214
September.....	134	15	54
October.....	120	69	137
November.....	145	40	165
December.....	135	29	141
January.....	223	30	182
February.....	149	27	253
March.....	113	38	177
April.....	63	22	66
May.....	85	24	76
June.....	73	31	78
July.....	102	38	122
Totals.....	1,444	412	1,685
Total, same months, 1879-80.....	858	209	799
1878-79.....	837	213	807

The averages per day for the month were 3.26 accidents, 1.23 killed and 3.94 injured; for the year they were 3.96 accidents, 1.19 killed and 4.56 injured.

The averages per month for the year were 120 accidents, 34 killed and 189 injured, against similar averages of 72 accidents, 17 killed and 67 injured in 1879-80, and 70 accidents, 18 killed and 67 injured in 1878-79.

The average casualties per accident were, for the month, 0.374 killed and 1.196 injured; for the year, 0.285 killed and 1.153 injured.

Crops.

The quarterly report of the Kansas State Board of Agriculture is especially valuable as giving full statements of acreage of different crops, showing a total for everything of 7,552,359 acres this year, against 7,163,850 last, an increase of 388,509 acres, or 5.4 per cent. There was a decrease of about 9 per cent. in the wheat acreage, and of nearly 30 per cent. in the oats, but an increase of nearly 15 per cent. (527,158 acres) in the corn, which, by the way, this year covers considerably more than half (55½ per cent.) of the whole acreage cultivated, while wheat has 29 per cent. of it. The Board estimates the crop of winter wheat at 23,154,400 bushels, which, it says, is considerably less than last year. But the United States Bureau of Agriculture last year estimated the production of both spring and winter wheat as only 19,850,000 bushels, and one-eleventh of the acreage was (and is this year) spring wheat. The Agricultural Department's figures, however, were made early, and announced as subject to correction, and the State Board, having the benefit of the latest statistics, probably is nearly right for 1880, when there must have been about 25,500,000 bushels of spring and winter wheat grown in Kansas. This year's production, apparently, is nearly the same, and not more, as we reported recently on the basis of estimates then made.

The Minnesota official state report issued Aug. 1 gave the acres of wheat in the state this year as 2,960,678—only 600 acres more than last year. It gives the average

yield as 13.3 bushels per acre last year (making 39,371,800 bushels), and makes no estimate of production this year. Local authorities have done so since, however, on the basis of extended inquiries in every section. One makes the yield a trifle greater, and the other a trifle less than last year. Though there was no increase in the acreage of wheat in Minnesota this year, there was a considerable one in that of other grains—the aggregate of wheat, corn, oats and barley being 4,377,372 acres this year, against 4,183,922 last year, an increase of 193,450 acres, or 4.6 per cent. This increase, counting only 40 acres per man, would give employment to less than 5,000 additional men. The very late spring doubtless decreased the acreage. In Minnesota, unlike Kansas, by far the larger part of the cultivated ground is sown to wheat—this year 67½ per cent. of the whole (against 29 in Kansas); while only 11 per cent. is in corn. The acreage of corn in Kansas, by the way, is about eight times that in Minnesota, but Minnesota has more wheat by a third, and a total acreage of grain 35 per cent. less.

The Illinois Department of Agriculture reports that corrected estimates of the winter-wheat crop, based largely upon the results of threshing, indicate that 62 counties which last year produced 32,632,055 bushels this year will have but 18,448,565 bushels—59 per cent. less. If the other 20 winter-wheat counties have done as poorly there will be a decrease of 31,700,000 bushels in the crop of the state—a very serious matter for the wheat-growers, and a misfortune for many of the carriers. The Illinois wheat-growers, however, have been making large profits for four successive years, and they are perfectly able to endure their bad luck—more so than some of the carriers.

Reports (unofficial) from Southern Nebraska, say that the wheat crop (which but recently was reported very good), will be but 10 bushels to the acre in the Missouri river counties, and 12 bushels in the others. This, though a light yield, is better than last year, when the average yield in Nebraska was but 9 bushels per acre. Of other small grains the yield is reported fair, and the prospect for corn is reported decidedly good, and if so, the year will be much more favorable than last year.

The Department of Agriculture has just reported the average condition of spring wheat for the whole country, showing it to be 81 per cent. of a full crop, against 88 per cent. last year and 81 per cent. in 1879. As the acreage and crops of spring wheat for 1880 have never been reported, so far as we know, this announcement is of comparatively little value in estimating the aggregate yield. The previous year's crop, and the acreage both years should be reported with every such announcement of condition. But we know generally, that substantially all the Wisconsin, Minnesota, Dakota, Iowa, Nebraska and California wheat is spring grain, and not a great deal is raised elsewhere. These states in 1880 produced about 149,000,000 bushels of wheat. There was about the same acreage this year as last, there being a considerable decrease in some states and a large increase hardly anywhere except in Dakota, whose total acreage is as yet small. A reduction in condition from 88 to 81 would reduce this yield 12,000,000 bushels—an insignificant amount compared with the reduction in the winter-wheat crop, which is reported to have been 31,000,000 in the single state of Illinois. Probably more than half of this decrease is in the state of California, which had a pretty good crop this year, but an exceptionally heavy one last year. In the Northwest there is reported a very large decrease in Iowa (which produced 36,000,000 bushels last year, but has a smaller acreage this), and a slight decrease in Minnesota and Nebraska. In Dakota a fair crop is reported.

More unfavorable is the report of the condition of corn, which is given as 77 this year against 90 the month before and 98 Aug. 1, 1880. Last year, however, the corn was in extraordinarily good condition at this time, but it fell off afterwards so that the yield was less than the year before. There is time for corn to improve in condition, but only about two weeks more; enough rain in August and not too much will settle its fate, barring frosts. The South, and especially the Southwest, shows a very bad condition, there being less than half a crop in Texas, where it is already ripe. Strange to say, while the condition in Kansas is but 74, that in Nebraska is 92. Kansas produced 72,000,000 bushels last year and Nebraska 61,000,000. Their corn crops are unimportant compared with those of Ohio, Indiana, Illinois, Iowa and Missouri, which last year produced 815,000,000 bushels, 470,000,000 of which were grown in Illinois and Iowa—the great corn states.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Texas Trunk.—Extended east by south to Kaufman, Tex., 20 miles.

Roswell.—Track laid from Doraville, Ga., north by west to Dunwoody, 7 miles. Gauge, 3 ft.

Northern Pacific.—The track of the *Pend D'Oreille Division* is extended from Hangman Creek, Wash. Ter., north-east to Spokane Falls, 3 miles.

Indiana, Illinois & Iowa.—The first track is laid from Monee, Ill., westward 4 miles.

Morgan's Louisiana & Texas.—The *North Branch* is extended from Garland, La., north to Holmesville, 8 miles.

New Orleans & Pacific.—Extended from Gloster, La., south by east to Mansfield, 8 miles. Track laid from Alexandria, La., southeast 15 miles.

This is a total of 65 miles of new railroad, making 3,180 miles this year, against 2,704 miles at the corresponding time in 1880, 1,846 miles in 1879, 1,005 miles in 1878, 943

miles in 1877, 1,231 miles in 1876, 607 miles in 1875, 916 miles in 1874, 2,028 miles in 1873 and 3,485 miles in 1872.

LAKE RATES have been revolutionized since we quoted them last, two weeks ago, and almost entirely within the last week. They had risen from 1½ to 2 cents a bushel on corn from Chicago to Buffalo by Wednesday of last week. Saturday afternoon cargoes were taken at 3 cents and Monday and since at 3½ cents. But this is not all. The shipments of coal to the West are so large that the rates have been forced up to figures unheard of before in midsummer. Usually, for several years at least, the bulk of the anthracite coal carried from Buffalo or Erie to Chicago and Milwaukee has paid from 25 to 50 cents per ton, and the average rate probably has been from 30 to 35 cents. But this year when lake rates in the other direction were lowest, the coal rate was not lower than 75 cents, and it advanced to \$1 before grain rates advanced at all, and now \$1.40 cents is paid. Thus a vessel which received but \$700 for carrying a cargo of grain down was paid \$800 to \$1,000 for carrying a cargo of coal up, with no expense for loading and unloading. Since the advance it gets \$1,300 for the corn down and \$1,400 for the coal up. The fact that the vessels were getting cargoes in both directions and high rates on the up cargo explains why the vessel interest has made no complaints this summer. Lake vessels have probably made good profits all the time, and are making large profits now in spite of the railroad war. Why there should be such a pressure of coal shipments we do not understand. But last year there was a short stock when navigation was unexpectedly closed, and the very long and severe winter exhausted it. Warned by this dealers and consumers will probably lay in a larger stock than usual, and have it forwarded earlier than usual, to make sure. Moreover, the consumption of anthracite in the West is extending. We have heard recently of a considerable trade in anthracite at interior ports in Nebraska, nearly 1,500 miles from the mines, and which cannot be reached without at least 500 miles of rail transportation, while much or most of it actually is brought all the way by rail, as back loads for cars which carried Nebraska grain to the East. It would seem that this "boom" in coal freights ought to be of advantage to the railroads also and help them to get better rates on their part of this traffic, and to increase the traffic. When there is a profitable grain traffic the railroads are not always willing to let their cars be held to get a load of coal and then be held again (sometimes weeks at a time), until the load is discharged; but with present rates on grain there cannot be much objection to the delay, and the coal rate is, perhaps, as high as the grain rate.

All this has not helped canal rates a particle. They remain at 3½ cents a bushel for corn and 4 cents for wheat from Buffalo to New York, and a very large number of the boats are laid up. A fair division of the rate from Chicago to New York seems to be one-third to the lake vessels and two-thirds to the canal boats; now the lake vessels are getting very nearly as much as the canal boats for the down cargo, and vastly more in proportion for the up cargo.

Ocean rates have advanced a little, and have been quoted as high as 6d. and 6½d. from New York to Liverpool, but Wednesday were as low as 5½d.

THE PASSENGER WAR shows no change, except a reduction from \$12.75 to \$12 in the price of St. Louis tickets, the rate to Chicago remaining firm at \$7. This, by the way, is a discrimination which St. Louis might protest against. St. Louis is but 16 per cent. farther than Chicago from New York, and the time is the same. Why charge \$8 a day for traveling to St. Louis, and but \$4.67 on the Chicago route? We suggest an explanation to soothe St. Louis: it is worth more to go to the Future Great City, and the railroads charge in proportion to the value of the commodity they have to sell! The Grand Trunk continues to carry passengers from Chicago to Boston, as well as from Boston to New York, for \$5. At first, for a week or ten days, there were, it is said, about 250 tickets a day bought at Chicago, but recently 150 is about the number. The other roads pay no attention to this rate, which is probably their best course. They are reported as saying that their Boston travel is about as large as before; but it is difficult to believe this. However, they will do better to lose passengers than to lose profit. A little trouble between the Wabash and the Chicago & Alton on coupon tickets over their roads was reported last week. The rates between St. Louis and Kansas City, Chicago and Kansas City and Chicago and St. Louis (as probably many do not know) have never been restored since the great war of last fall between the Wabash and the Chicago & Alton. All roads want to restore them, but there are so many unlimited tickets outstanding that they cannot. But what they have done is to charge more for coupon tickets reading over a connecting road, and theirs than for the tickets over their roads alone. The trouble began, it is said, by the Wabash giving its local rate for through coupon tickets from points west of Kansas City, which was immediately followed by the Chicago & Alton giving its local rate for through coupon tickets from points east of Kansas City and Chicago. It is not a very big business, but now that there is a through line to the Pacific by way of Kansas City, it tends to spoil the Pacific travel between Chicago and Omaha. The regular rate here used to be \$20; but with only \$5 from Chicago to Kansas City, and the rate to the Pacific the same from Kansas City as from Omaha, the result can be imagined. The Chicago-Omaha lines will probably carry for amusement and not for profit for a time.

NEW YORK, LAKE ERIE & WESTERN EARNINGS have

just been reported for the month of June. Compared with last year the gross earnings were 8 per cent., the working expenses 12½ per cent., and the net earnings 2½ per cent. more than last year, the amount of increase in net earnings being \$15,122. The traffic of about one-third of the month was affected by the low east-bound freight rates, of none of it by the low west-bound freight and passenger rates.

For the last four years this company's earnings and expenses in June have been:

	1878.	1879.	1880.	1881.
Gross earnings...	\$1,258,900	\$1,230,419	\$1,691,812	\$1,794,982
Expenses	772,680	939,806	915,794	1,063,732

Net earnings. \$486,310 \$290,523 \$776,108 \$731,230

The gain since 1879 is 46 per cent. in gross and 150 per cent. in net earnings, June of 1879, however, east-bound rates were probably lower on the average than ever before or since.

For the nine months of the fiscal year ending with August the Erie shows an increase of 12½ per cent. in gross earnings, of 14½ per cent. in expenses, and of \$452,353, or 9 per cent., in net earnings, the latter being equal to about 4½ per cent. on the preferred stock.

For four successive years the earnings and expenses of the road for the nine months ending with June have been:

	1877-78.	1878-79.	1879-80.	1880-81.
Gross earnings...	\$11,728,087	\$11,723,670	\$13,713,841	\$15,421,430
Expenses	8,071,180	8,427,535	8,643,282	9,893,516

Net earnings... \$3,651,907 \$3,296,135 \$5,070,559 \$5,527,913

Increase in gross earnings this year is \$300,000 less than it was last year, and the increase in expenses is \$1,000,000 greater, so instead of the increase \$1,777,000 in net earnings made from 1879 to 1880, we have only the increase of \$452,000. But there has been an enormous increase since 1879—31½ per cent. in gross and 67½ per cent. in net earnings.

July will have to affect it, the very low through passage rates for two-thirds of the month, but the low west-bound freight rates only for a few days. For the worst condition of through rates we will have to wait for August, which is so bad that only a collapse of east-bound passenger rates to a level with the west-bound could well make them worse. Meanwhile the enormous coal traffic of this road, on which good rates are had, stands it in good stead.

CHICAGO SHIPMENTS EASTWARD are reported by the Board of Trade as 43,167 tons in the week ending Aug. 13, against 49,028 reported by it for the previous week, when the actual shipments were 54,690 tons. The distribution of the shipments, by the way, as reported in the Chicago papers frequently varies very greatly from the actual distribution. For instance, the percentage actually shipped by each route in the week ending Aug. 6 compares as follows with the percentage as reported by the Board of Trade:

	Grand Trunk.	Mich. Cen. Shore.	Lake Erie.	Fort Wayne.	P. C. & St. L.	B. & O.
Actual.....	12.1	29.9	24.1	22.1	8.1	3.7
Board of Trade.	18.0	25.9	25.3	17.8	10.0	3.0

The actual percentages show that the two Vanderbilt roads got 54 per cent. of the whole, against 49 allotted in the pool; the two Pennsylvania roads 30.2, against 33 in the pool. The Baltimore & Ohio has not half its percentage, and the Chicago & Grand Trunk has a fifth more than its. For the whole period since the 15-cent rate has existed we understand that the Vanderbilt roads have had about 52 per cent. of the whole and the Pennsylvania roads about 31, while the Baltimore & Ohio has had a good deal less than its 8 per cent., and the Grand Trunk something more than its 10 per cent.—not great variations from the pool percentages, nor from the results of the whole year, in which the shipments have varied but little from the apportionment.

Actual shipments this year and last have been each week:

	Average.	1881.	1880.
May 1 to June 25	41,529	41,529	36,854
Week to			
June 25	81,090	81,090	55,304
July 2	67,973	67,973	46,995
" 9	56,167	56,167	34,223
" 16	62,638	62,638	34,589
" 23	54,211	54,211	33,373
" 30	59,370	59,370	34,371
Aug. 6	54,000	54,000	42,787
" 13	50,000*	50,000*	38,640

* One day estimated.

The great increase in lake rates within the past week (they have nearly doubled) should have a tendency to increase the rail shipments this week.

THE CHICAGO TRIBUNE commenting upon the failure to maintain rates says: "The real trouble is that there was not business enough for all the trunk railroads at the rate they demanded in competition with the water routes." If so, then rates never could have been maintained; for before rates were reduced, the traffic in both directions over the trunk lines was much greater than ever before at that time of year. Further, the combination of the railroads does not contemplate rates of any particular amount, but equal and uniform rates to all shippers and by all routes at the same time. The Joint Executive Committee could reduce rates as well as any single company, and would do so if a satisfactory traffic could not be had otherwise. But from Portland to St. Louis not one member expressed himself dissatisfied with the traffic, or urged lower rates. The roads do not carry for the fun of the thing; they want to make some profit out of the business, and it would have been perfectly easy for them to have made two, three or four times the profit on the east bound through business that they actually have made since June 17, when the 15-cent rate became general. Indeed, if train-crews and other hands could have been dismissed till needed and rolling-stock laid up without injury, the roads would have made more money if they had carried no east-bound through freight at all. There seems to be a strange delusion that low rail rates cannot be made without a railroad war.

but it is as easy to agree upon low as upon high rates, and if any single trunk line insists upon them, they must be made, and would be made, regularly and uniform, and at a fixed time, if the course prescribed by the combination were followed.

THE ACTION OF THE JOINT EXECUTIVE COMMITTEE last week has been very generally misconceived, as was indeed the object for which it was called. The object, as stated in the call, was not to restore rates, but to devise ways to prevent the recurrence of troubles like the present. It was not anticipated when it was called that any attempt would be made then to restore rates, and with the existing disposition of some of those in authority, it was believed impossible to do so; but at the meeting a restoration to the 20-cent rate was proposed by some one, and as all present were in favor of such a restoration, they all voted for it. Since then some have spoken of this as an "order" to advance rates, or a resolve which cannot be executed. But there has been no order and no resolve passed. An advance in rates can be made only by a unanimous vote of the Joint Executive Committee, and a resolve to advance rates is not passed until it has received a unanimous vote. The members do not need to be present for this, and in fact changes in rates are not usually made at a meeting, but by a vote transmitted by telegraph. The vote has not yet been completed on the resolve submitted to the meeting last week. It was submitted with a condition that if any contracts were outstanding at lower rates, the roads would not be bound by any regular tariff at higher rates. We do not understand that evidence has been given of any outstanding contracts for east-bound freight, but there may be some, and no one seems to expect that all the roads will vote for the proposed advance on the 23d. Yet unexpected circumstances favor an advance at this time. The lake rates have advanced nearly 100 per cent. within ten days, and the pressure of traffic is such that the railroads would be likely to get a very good traffic at a 20-cent rate.

A MONEY POOL FOR FIVE YEARS is talked about by the newspapers, and especially by those which think stocks ought to go up immediately, as under discussion by the trunk lines, and likely to be adopted at any moment. No railroad officer so far has been found, we believe, who has ever heard of the scheme in connection with the present troubles. Mr. Vanderbilt is said to insist on a pool for five years, and upon basing it on the actual distribution of the traffic in 1880. Whether there is any truth in the report that this plan is now under consideration or not, we cannot say; but we can account for the origin of the report. Last March, when the first action was had to remedy the irregularities from which the New York Central suffered, and when, by the way, every one of the parties concerned agreed that the east-bound traffic should be pooled over the trunk lines (which has never been done, be it remembered), Mr. Vanderbilt is reported to have proposed that a pool (not a money pool) should be made for five years, and to have insisted that it should be based on the traffic actually carried by the several roads in 1880. This left no room for negotiation, and none of the other lines, we believe, were inclined to accept an ultimatum without negotiation. No pool for five years can be made without provision for its revision because there is every prospect that before the five years expire some new lines will enter the field and will have to be given a share of the traffic. A new road from New York to Buffalo will affect the New York Central and the Erie more than the Pennsylvania and the Baltimore & Ohio, and so on.

THE REDUCTION IN WEST-BOUND RATES will make a much larger reduction of profits than we estimated last week. On the basis of the business of the past year it will amount for one year (if it shall last so long, as it probably will not) to as much as \$6,500,000. About half of the total west-bound shipments is of fourth-class freight, on which the reduction is from 40 to 19 cents, or 52 per cent., and nearly a quarter is first-class, which is reduced from 75 to 45. The average reduction must be considerably more than 40 per cent. The shipments are much larger than last year, but so they have been all the year. On the shipments from New York alone the reduction must be at the rate of about \$3,600,000 a year. This includes the rates through to destination to the several competing points this side of the Mississippi, and, of course, does not fall wholly on the trunk lines. They, however, must suffer as much as half of it, we should say. The whole amount is something less than a year's 8 per cent. dividends on the New York Central, and something more than 8 per cent. on the Pennsylvania stock. It is losses like these which make the New York Central's surplus, of 3.82 per cent. on the stock last year, come handy. There are two or three roads that can lose a good deal of profit and still have a good deal left, but most, alas! cannot so well bear misfortune.

PAVING STONES are hardly considered promising freight for long railroad hauls. It is not uncommon for them to be carried half way round the world in ships, because they make good ballast, and ballast must be had. New Orleans is, or used to be, largely paved with stones that came from New England or Europe. But we see in a Chicago paper that last week 20 car-loads of paving stones were brought to that city by the Michigan Central, having been quarried on Hurricane Island, in Maine, some 1,200 miles distant, and it is said that there will be 600 car-loads in all. Extremely low rates must be made on these, or they could not bear transportation. A quarter of a cent per ton per mile would make the freight bill about \$3 per ton, or about \$7.50 cents per cubic yard. One would suppose it would be cheaper to go to Lake Superior for paving stones, whence vessels would probably bring them for about a dollar a ton. If Chicago is

to be paved with stone from Maine, there will be no difficulty in getting back loads for all the cars that go east for some time to come. And, very likely, it will be better to accept even 1/2 cent per ton per mile on such freight, which is a clear addition to the traffic, rather than have the cars go west empty, as three fourths of them have to do usually.

THE CANAL GRAIN SHIPMENTS have been as follows per week on the average for the six weeks before and the eight weeks since the 15-cent. rate was made, and for the week ending Aug. 12 last:

	1881	P. c. by rail.
By canal.	By rail.	
Av. to June 17.....	1,674,885	41.0
Av. since June 17.....	1,074,718	64.7
Week ending Aug. 12.....	924,100	66.0

	1880	P. c. by rail.
By canal.	By rail.	
Av. to June 17.....	2,671,689	32.4
Av. since June 17.....	2,304,373	44.0
Week ending Aug. 12.....	2,735,205	40.0

Thus, last week shows a large gain in canal receipts and a small one in rail receipts over the previous week, but, with that exception, they are the smallest since the 15-cent rate was made. On the average, canal shipments have been 749,585 bushels a week less, and rail shipments 528,600 bushels more since the 15-cent rate was made than they were before. The average weekly earnings on the rail shipments, however, must have been about a sixth less since that time.

A NEW WOOD PRESERVING PROCESS has been invented in France by M. Jacques. He first impregnates the timber thoroughly with a simple solution of soap, mixed with an acid—preferably phenic acid. This causes the formation, in a few days, within the wood of a fatty acid, which is insoluble in water, and impregnates the remotest fibres. The reaction of the acid on the soap does not take place until a portion of the water has evaporated. It is claimed that more perfect impregnation can be had in this way than with creosote, and that there is no danger of the washing out of the preservative from the exposed surfaces, as when sulphate of copper is used. The Government Commission on Technical Railroad Operation in France is said to favor this process.

Paying Locomotive Engineers—The Premium System.

We give below a summary of a discussion at the recent convention of the Master Mechanics' Association.

The question submitted for discussion was: "Is the present system of running locomotive engines the most economical?"

Mr. SETCHEL said that in proposing that question he had reference to the system of paying engineers by the day or by the mileage. A few roads were paying their engineers by the mile. It was the experience of most master mechanics that by adopting a system of work that brings all the energies of men into play they were able almost to double their capacity. In a blacksmith shop, for instance, they could get two or three times the work done by paying by the piece that they got by paying by the day. He thought that a contract system, under which the engineer could get some gain by care in the use of oil and fuel, would secure results that would startle them all. Mr. Brooks had told him that when on the Erie he had prepared some papers showing that such a system would save a very large amount to the company and still leave a handsome profit to the men. These papers had been submitted to Mr. Fisk, but circumstances had prevented any action. He thought the Association should take the matter up.

Mr. HAYES thought there was a great deal in the matter. Mr. Winans had adopted that system on the railroad from St. Petersburg to Moscow when he was in Russia, and Mr. Winans had told him that the contract system had nearly doubled his profits.

Mr. FLYNN said that some 30 years ago the railroad from Philadelphia to Baltimore was run for three years under a lease to three men, who paid an agreed rate of dividend to the stockholders. They adopted a contract system for running locomotives, allowing each engineer one-half of what he could save on fuel and supplies, and paying them a regular price for the mileage run. These men made money out of the lease, so much that the stockholders refused to renew it. The contract system was afterward dropped, for some reason unknown to him, though its success had been shown. The subject required a good deal of consideration. A fixed allowance of fuel and supplies per trip should be agreed on, and engineers then allowed a share of all savings. Both the company and the employees would make more money.

Mr. WILDER thought that to call the system a contract system was not a good name. Some roads fixed a certain allowance of coal per car mile, and gave their men a certain premium on all they could save below that. To call this a premium system was better than a contract system.

Mr. SETCHEL thought the contract system was the best. The premium system brought a few good men to the surface, and those who did not get the premium were discouraged. Under a contract system each man would get all he could save. Another advantage would be in relation to fuel, that engineers would watch the quality of fuel very closely and would soon find out what they could do with each kind of coal. In the same way engineers would watch closely the action of different grades. In this way they could get at much valuable information.

Mr. WILDER agreed with the last part of Mr. Setchel's remarks. He still thought it would be better to call the system a premium system. If they gave an engineer part of what he could save, that would be a premium on his skill and care. A contract system, he thought, implied an agreement for a fixed time, and would, perhaps, include more than they meant.

Mr. SETCHEL thought the only difference was in the term used. What he called the premium system had not been extended as far as Mr. Wilder meant. For instance, under the system used on some roads those who saved a certain amount got a premium, but those who came nearly but not quite up to the standard got nothing. And, after a time they were apt to be discouraged. But if every man got whatever he could save it would be better. But virtually they would enter into a contract with the men.

Mr. WIGGIN said that nearly the same system now proposed had been tried on the New Jersey Central 25 years ago, and had worked very well. The system applied to all expenses of the engine, fuel, oil, repairs, etc., and was carried out until the death of Mr. Stearns, the Superintendent who originated it.

Mr. WOODCOCK said that the system had been discontinued, partly on account of financial difficulties of the company.

Mr. WIGGIN remembered that some men made as much as \$30 or \$40 extra a month under that system, while others did not make anything.

Mr. McCURM thought this one of the most important subjects which had come before the convention.

Mr. BOON said that they had been using a somewhat similar system, with a very decided saving in expenses. He did not, however, think their premium system was perfect, but preferred the contract system suggested. The system on their road did not work altogether well, on account of their classification of engineers. They had four classes, and it made some dissatisfaction among the classes having the lowest pay. They gave a monthly premium of \$30 to engineers and \$10 to firemen, and also a yearly premium. He believed the contract system, under which every man would have a share in what he could save, was the best.

Mr. WILDER said that they wanted the best possible system, without regard to the name.

Mr. BRIGGS suggested the reference of the matter to a committee.

Mr. SCHAEFFER thought the committee would have quite a problem to solve. The matter was of much importance and the following points should be considered: 1. Each engine should be run as nearly as possible by one man. 2. An equal quality of coal and oil should be used. 3. The condition of the engine, and especially of the boiler, should receive special attention. 4. There should be a correct statement from the Transportation Department of the train weight. 5. An allowance for weather. 6. A correct statement of switching done on the road. 7. A statement of delays on the road which require fuel. They should be very strict in appointing engineers and promoting firemen. They should also impart useful information to their men.

Mr. WILDER said that the committee should get all the information possible, and present to them some plan for running engines.

A resolution to refer the subject to a committee to report next year was then adopted, and the discussion closed.

The Best Lagging for Locomotive Boilers.

At the recent convention of the Master Mechanics' Association a discussion, of which we give a summary herewith, was had on the following question:

"What is the best lagging or covering for locomotive boilers, and the best means of applying same?"

Mr. WOODCOCK said that he had submitted the question to get information. Wood was chiefly used, and there was some trouble in keeping it in shape. On his road they first fastened the hoops around the boiler and then attached the lagging strips to the hoops; but in time the hoops would get charred or even catch fire and the lagging would drop out of place.

Mr. SETCHEL had never tried anything but wood, and had found the same trouble in keeping it in shape. The hoops burned off and the lagging sunk down, giving the jacket an uneven appearance. Some time ago a man had covered an engine on their road with asbestos, the agreement being that he was to be paid if it stood a year's trial. The engine was compared with three others doing the same work, and for some reason did not do quite as well as the others. The bill for the covering was \$75, while the wooden lagging cost \$15. The bill was not paid, as the engine had not done well. He had never seen anything better than wood, but would like to know if there was anything better in use.

Mr. FLYNN said that in South Carolina they were using a substance called Kaoline, an earthy or clayey material put on the boiler about the usual thickness of wooden lagging, and he understood it was doing very well. There was certainly no trouble from fire with it, as there was with wooden lagging. It was said also to give the outside jacket a very smooth, neat appearance.

Mr. COOLIDGE thought there was great benefit in putting under the wood asbestos, which could be had in layers of different thicknesses. He used one sample about 1/4 in. thick; it was a non-conductor of heat and made the wood last much longer. They had tried several preparations; the best was one called the "salamander covering" composed, he believed, of asbestos with some plaster of Paris and other substances. This was put on an engine in 1870, and after 10 years' use he removed the iron jacket and found the lagging intact, perfectly smooth and in good condition. The iron jacket also was in good condition. In preventing radiation of heat from the boiler it was quite equal to wood, although the iron jacket would get apparently hotter than over wood lagging. The air space under the wooden lagging strips was a very good non-conductor. This covering had lasted 11 years in good order. To examine the boiler, it was easy to remove a section of the covering. He had also tried other boiler coverings which he could hardly recommend; they were composed largely of clay, with, perhaps, some cement. At the present time they were using a preparation of asbestos, which cost about \$60 for a boiler. Considering the time it lasted it was very economical. It was also very useful in preventing fires from cinders getting under the lagging, as they would do with wooden lagging. The results were generally very satisfactory, though he had made no accurate experiments to determine the amount of radiation. He was quite willing to recommend a trial of this covering.

The discussion was then closed.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Railroad Conventions.

The International Road-Masters' Association will hold its annual convention in Cincinnati on the second Wednesday in September (Sept. 14) next.

The National Association of General Passenger & Ticket Agents will meet in St. Louis, Sept. 20.

The Master Car-Painters' Association will hold its annual convention in New York City Sept. 21, beginning at 10 A. M.

The Railroad Commissioners' Convention has been called to hold the fourth annual meeting in Atlanta, Ga., Oct. 11.

The Order of Railway Conductors will hold its fourteenth annual convention in Buffalo, N. Y., Oct. 4.

Master Car-Painters' Association.

The Twelfth Annual Convention of the Master Car-Painters' Association will be held in New York city, opening on Wednesday, Sept. 21, at 10 A. M. The Secretary, Mr. R. McKeon, of Kent, O., gives notice that the Metropolitan Hotel on Broadway has been chosen as the headquarters of the Association, and the free use of parlors is given in which to hold the daily sessions. The best rooms will be given to delegates and the ladies who may accompany them. Terms, \$3 per day. Members desiring to engage rooms in advance may apply by letter or telegram to the hotel three days previous to the meeting.

The Convention will continue in session three days, adjourning early on Friday evening.

A cordial invitation is extended to all master car and locomotive painters throughout the United States and Canada to attend the convention, and take a personal interest in advancing its objects by an interchange of views, which may be freely expressed by every delegate in attendance at the annual meetings of this association.

All communications from members who are appointed on the several subjects should be forwarded to the Secretary by Sept. 15.

The annexed subjects will be brought before the convention:

1. *What are the adulterations employed, and the most simple Methods of testing the Qualities and Detecting the Adulterations in Paint Stock?*—A discussion, opened by J. H. Will, New York & Harlem, Morrisania, N. Y.

2. *Inside Finish of Passenger Cars.*—Essay, by D. C. Cooley, late of Chicago, Burlington & Quincy, Aurora, Ill.

3. *The Cause of Varnish Sweating, and the Best Method to Prevent it.*—A discussion, opened by H. C. Burch, New York Central Sleeping Car Co., West Albany, N. Y.

4. *Progress of Car Painting.*—Essay, by R. McKeon, New York, Pennsylvania & Ohio, Kent, O.

5. *The Best System of Running a Paint Shop, as to Grading, Rating and Managing Men; also, Keeping Paint Stock, Brushes and other Tools, Serving them out, Keeping a Record of Cars, etc.*—A discussion, introduced by C. E. Bradley, Pullman Car Works, Detroit, Mich.

6. *Outside Decoration of Railway Passenger Cars.*—Essay, by J. Rattenbury, Chicago, Rock Island & Pacific, Chicago, Ill.

7. *The different formations of Cracks in Varnish and the Cause assigned to each.*—A discussion, introduced by Wm. Davis, Canada Southern, St. Thomas, Ont.

8. *Head Lining and Inside Decoration.*—Essay, by D. D. Robertson, Michigan Central, Detroit, Mich.

9. *Locomotive Painting.*—Essay, by J. M. Millard, late of Cleveland, Columbus, Cincinnati & Indianapolis, Cleveland, Ohio.

10. *The Best and Most Economical Material for, and the Best Method of Painting Freight Cars, both New and Old.*—A general discussion.

The meeting will be one of great interest to members and to all engaged in that kind of railroad work.

Railway Traveling Agents' Association.

The annual convention of this Association was held in Washington, Aug. 10. There was a large attendance and a number of new members were admitted. Communications were read from about 30 Western members withdrawing from the Association, and announcing that they propose to organize a Western Association. This withdrawal grows out of some unpleasantness that occurred at the convention last year at Buffalo.

After the reading of several communications from absent members, it was decided to hold the next annual convention at Montreal.

After electing officers an invitation to visit Mt. Vernon the next day was accepted.

Resolutions of regret at the death of John M. Kelley, of the Kankakee Line, and of sympathy for his family, were adopted. A resolution was adopted tendering sympathy to the President, and expressing hopes for his speedy recovery.

The Committee to examine the Secretary and Treasurer's books reported that his expenses had been less during last year than ever before. He was complimented upon his able and efficient management of the office by unanimous vote, and his salary was increased.

On the following day a short session was held, at which the usual routine business was disposed of. The convention then adjourned, and the members proceeded to join in the excursion to Mt. Vernon.

Northwestern Passenger Meeting.

A special meeting of general managers and ticket agents was held in Chicago, June 11, the official report of which is as follows:

Meeting called to order, and G. W. Smith elected Chairman; J. M. Chesbrough, Secretary.

There were present:

A. J. Smith, General Passenger Agent Cleveland, Columbus, Cincinnati & Indianapolis; J. Charlton, General Passenger and Ticket Agent Chicago & Alton; G. H. Daniels, General Ticket Agent Wabash, St. Louis & Pacific; P. Lowell, General Passenger Agent Chicago, Burlington & Quincy; G. W. Smith, General Passenger Agent Lake Erie & Western; W. P. Johnson, General Passenger Agent Lake Shore & Michigan Southern; E. A. Ford, General Passenger and Ticket Agent Pittsburgh, Cincinnati & St. Louis, Pennsylvania Company and Vandalia Line; T. P. Barry, General Passenger Agent Marietta & Cincinnati; J. Egan, General Passenger and Ticket Agent Cincinnati, Indianapolis, St. Louis & Chicago; F. Chandler, General Passenger and Ticket Agent Missouri Pacific; W. H. Stennett, General Passenger Agent Chicago & Northwestern; W. A. Thrall, General Ticket Agent Chicago & Northwestern; A. H. Hanson, General Passenger Agent, Illinois Central; C. W. Adams, Assistant General Passenger Agent Pennsylvania Company; C. C. Cobb, Assistant General Passenger Agent Pittsburgh, Cincinnati & St. Louis; J. M. Chesbrough, Assistant General Passenger Agent Vandalia Line.

The following resolutions were adopted:

"Resolved, 1. That from and after the 20th inst. we will base limited rates from points east of Chicago and St. Louis to Kansas City and points beyond on the \$5 rate from Chicago to Kansas City and the \$4 rate from St. Louis to Kansas City, whichever makes the lowest, using regular local first or second-class rates to Chicago and St. Louis to base the through rates.

"Resolved, 2. It being understood that the same through rates to Colorado points, and to Cheyenne, and to all points west thereof, may apply via Omaha as via Kansas City. In reporting the above the arbiters west of Council Bluffs must be protected and the balance be reported to the roads east of the Missouri River.

"Resolved, That each agent at junction points shall compare rates with agents of other lines on or before the 20th inst., that rates may be the same from each point, via all lines.

"Resolved, That the Secretary be instructed to ascertain from all roads interested and not represented at this meeting, whether they will adopt these rates or not, and issue a circular before the 20th inst., stating what roads will and will not adopt rates on the above basis."

ELECTIONS AND APPOINTMENTS.

Atlantic & Pacific.—Mr. H. C. Nutt, of Chicago, has been chosen President, in place of Thomas Nickerson, resigned. Mr. C. S. Tuckerman has been chosen Secretary and Treasurer, in place of S. W. Reynolds, resigned.

Board of Arbitration.—Mr. Charles Francis Adams, Jr., and Mr. David A. Wells, in announcing their acceptance of reelections as arbitrators, say that, as there is at present prospect of but little duty for them, they wish to consider their positions as honorary, and not entitled to salary.

Boston, Barre & Gardner.—Mr. A. G. Bullock, of Worcester, Mass., has been chosen a director in place of I. H. Ross, deceased.

Chicago, Burlington & Quincy.—Mr. K. H. Wade is appointed Superintendent of the Iowa Division, with office at Burlington, Ia., in place of W. C. Perkins, resigned. Mr. Wade has been on the Wabash over 20 years, and was recently Division Superintendent on that road.

Detroit, Grand Haven & Milwaukee.—Mr. Godfrey Macdonald has been appointed General Through-Freight Agent, with office in Milwaukee, Wis. He has for a long time represented the Great Western in Chicago.

Germantown, Norristown & Philadelphia.—This company has been organized with the following officers: President, A. J. Cassatt; Secretary, Albert Hewson; Treasurer, Wm. Taylor. It is controlled by the Pennsylvania Railroad Company.

Lake Shore & Michigan Southern.—A circular from General Manager Newell announces the resignation of Mr. Charles Faine as General Superintendent, and says: "Pending the appointment of his successor, all communications pertaining to the business of that department should be addressed to the General Superintendent Lake Shore and Michigan Railway." It is reported that the vacancy will not be filled immediately.

New York & Greenwood Lake.—Mr. George Hill has been appointed Master Mechanic, with office at Pompton Junction, N. J. He was recently in the Erie shops at Port Jervis.

New Zealand.—This company has been organized by the election of the following directors: Joseph A. Dodge, Plymouth, N. H.; Henry L. Tilton, Littleton, N. H.; J. P. Pitman, Laconia, N. H.; Samuel N. Bell, Manchester, N. H.; J. Thomas Vose, Boston.

Pensacola & Atlantic.—Mr. A. W. Gloster is appointed Chief Engineer of this company. In future all reports and requisitions in his department will be made to him. Office at Pensacola, Fla.

Portsmouth & Dover.—At the annual meeting last week the following were chosen: President, Frank Jones; Directors, A. R. Hatch, Daniel Marcy, W. H. Sise, C. H. Sawyer, Oliver Wyatt, A. H. Young; Clerk, Calvin Page; Treasurer, George Treadwell. The road is leased to the Eastern Company.

Railway Traveling Agents' Association.—At the annual meeting in Washington, Aug. 10, the following officers were chosen: President, J. D. Welsh, Union Pacific; Vice-President, Albert D. Wrenn, Nashville, Chattanooga & St. Louis; Secretary and Treasurer, W. B. Tenney, Marietta & Cincinnati.

St. Johnsbury & Lake Champlain.—At the annual meeting last week the following directors were chosen: A. B. Jewett, Swanton, Vt.; Bradley Barlow, St. Albans, Vt.; George W. Hendee, Morrisville, Vt.; Franklin Fairbanks, Horace Fairbanks, St. Johnsbury, Vt.; Thomas Coggeshall, Newport, R. I.; A. B. Harris, Springfield, Mass.; H. D. Hyde, Boston; Wm. H. Rhawn, Philadelphia.

Southern Pacific.—At the annual meeting in San Francisco, Aug. 10, the old board was re-elected as follows: Charles Crocker, Charles F. Crocker, W. V. Huntington, Charles Mayne, H. M. Newhall, N. F. Smith, J. L. Willcutt. The board re-elected Charles Crocker President; Charles F. Crocker, Vice-President; J. L. Willcutt, Secretary; N. F. Smith, Treasurer.

South Ferry & Sea Side Direct Transit Co.—Mr. Louis M. Brown is President, and Walter J. Morris Engineer of this new company. Office in Brooklyn, N. Y.

Spokane Falls & Columbia River.—This company has been organized with the following directors: W. P. Adams, Wm. Bigham, J. J. Browne, A. M. Cannon, C. B. Carlisle, G. A. Davis, D. M. Drumbeller, J. N. Glover, A. Goldsmith, John U. Hofstetter, C. B. King, C. E. Merriam, F. R. Moore, J. A. Porter, F. W. Symons. Office at Spokane Falls, Washington Territory.

Wabash, St. Louis & Pacific.—Mr. George W. Stevens is appointed Superintendent of the Ohio & Indiana Division, with office at Ft. Wayne, Ind., in place of Mr. K. H. Wade, who has gone to the Chicago, Burlington & Quincy. Mr. J. M. Goodrich succeeds Mr. Stevens as Chief Train Dispatcher at Ft. Wayne.

Mr. H. McElroy is appointed Chief Train Dispatcher of the El River Division.

Mr. Charles Knight is to be Train-Master of the new Detroit Division.

Mr. W. F. Merrill, General Superintendent of the Chicago & Iowa Division, makes the following assignments: A. H. Wood, Superintendent Chicago Division, with office in Chicago; F. L. Tompkins, Superintendent of the Peoria Division, with office in Peoria, Ill.; E. W. Armstrong, Superintendent of the Iowa Division, with office at Keokuk, Ia.; W. O. Hewitt, Master Mechanic, with office at Peoria; R. M. Hemphill, Master Car-Builder, with office at Peoria; J. A. Schreiner, Engineer in charge of roadway and structures, with office at Peoria; George C. Merrill, Fuel Agent, with office at Peoria.

PERSONAL.

—Mr. Frederick C. Hills, General Traffic Manager of the Sioux City & Pacific road, has resigned on account of ill health.

—Col. J. D. Yates has resigned his office as Chief Engineer of the North Carolina Midland, to accept a position on the Midland North Carolina.

—Mr. Edward R. Hamilton, Assistant to the Chief Engineer of the Chicago & Grand Trunk, has resigned, to accept a position as Division Engineer on the Northern Pacific.

—Mr. M. H. Taylor, Auditor of the Canada Southern road, has resigned his position, to take effect Sept. 1. Mr. Taylor will enter into business with Mr. Wm. L. Scott, of Erie.

—Mr. Eben E. Aldrich, Superintendent of the Troy & Boston road, died of typhoid fever in Troy, N. Y., Aug. 11. He was only 30 years old, but had been in the employ of the company 16 years, having entered its service as a boy when only 14 years old.

—Col. Charles P. Lemars died at Shullsburg, Wis., Aug. 15. He was formerly a railroad contractor, and built portions of the Illinois Central (Iowa Division), the Southern Minnesota and other roads. He had also been a steamboat captain on the Mississippi, and was extensively engaged in lead mining.

—Mr. Frederick W. Cumberland, who died in Toronto, Ont., last week, was an engineer by profession, and was employed as engineer on the Northern Railroad of Canada, many years ago. He was appointed Chief Engineer in

1859, and in 1860 was chosen Managing Director, and held that office until his death.

—Mr. James H. Williams died of pneumonia at his residence in Bellows Falls, Vt., Aug. 18, aged 69 years. He was a director of the Vermont Valley and the Cheshire companies, a director and Treasurer of the Rutland Railroad Company. He was also President of the Bellows Falls National Bank, and a respected citizen of that place.

—Mr. S. W. Cummings, General Passenger and Ticket Agent of the Fitchburg Railroad, having resigned to become Auditor of the Atlantic & Pacific Company, his associates in the Fitchburg office on Aug. 13 presented him an elegant set of Johnson's Encyclopedia, as a mark of esteem and friendship. The gift was accompanied with an autograph letter, signed by every gentleman in the office.

TRAFFIC AND EARNINGS.

Railroad Earnings.

Earnings for various periods are reported as follows:

Seven months ending July 31:

	1881.	1880.	Inc. or Dec.	P. c.
Ala. Gt. So.	\$402,804	\$333,491	I.	\$69,313 20.8
E. Tenn., Va. & Ga.	1,176,733	1,045,027	I.	131,706 12.6
Missouri Pacific	7,014,819	5,856,909	I.	1,157,910 19.8
Nash. Chatta. & St. L.	1,229,654	1,176,209	I.	53,355 4.5
Net earnings	484,530	407,301	D.	77,229 19.2
Peoria, Dec. & Ev.	336,185	218,584	I.	117,601 53.7
St. L., Alton & T. H.	835,953	707,009	I.	128,944 18.2

Six months ending June 30:

	1881.	1880.	Inc. or Dec.	P. c.
Boston & N. Y. Air Line	\$133,843	\$132,092	I.	\$1,751 0.8
Net earnings	60,411	60,019	I.	392 0.6
Bar. Cedar Rap. & No.	997,033	982,347	I.	14,686 1.6
Net earnings	242,207	349,728	D.	107,521 30.7
Cleve., Mt. Ver. & Del.	203,571	212,002	D.	8,431 4.0
Net earnings	23,705	42,682	D.	18,977 44.2
Des. Moines & Ft. Dodge	155,692	135,053	I.	20,639 15.3
Net earnings	723	53,238	D.	52,515 7,238 13.5
Mem. Pad. & No.	113,259	95,711	I.	17,548 18.3
Net earnings	17,138	10,931	I.	6,207 56.3
N. Y., Lake Erie & West.	9,997,393	9,091,064	I.	906,329 9.9
Net earnings	3,398,620	3,451,872	D.	53,252 1.5
St. L., I. M. & So.	3,335,429	2,618,480	I.	716,949 27.4
Net earnings	865,478	755,827	I.	109,651 14.5

Five months ending May 31:

	1881.	1880.	Inc. or Dec.	P. c.
Calo. & St. Louis	\$170,051	\$146,091	I.	\$23,960 16.4
Net earnings	25,984	12,842	I.	13,142 102.7
Paducah & E. town.	210,963	192,511	I.	18,452 9.6
Net earnings	56,904	35,084	I.	21,820 62.3

Month of June:

	1881.	1880.	Inc. or Dec.	P. c.
N. Y., Lake Erie & West.	\$1,794,982	\$1,661,812	I.	\$133,170 8.0
Net earnings	731,230	716,108	I.	15,122 2.1

Month of July:

	1881.	1880.	Inc. or Dec.	P. c.
Ala. Gt. So.	\$57,982	\$47,525	I.	\$10,457 21.8
East Tenn., Va. & Ga.	222,760	195,556	I.	27,213 13.9
Nash. Chatta. & St. L.	150,431	151,594	D.	1,163 0.8
Net earnings	50,626	55,346	D.	4,720 8.6
N. Y. & N. England	241,822	212,257	I.	29,565 13.9
Peoria, Dec. & Ev.	51,913	42,605	I.	9,308 21.5
St. L., Alton & T. H.	113,774	138,153	D.	24,379 17.7

First week of August:

	1881.	1880.	Inc. or Dec.	P. c.
Chl. Mil. & St. P.	\$390,000	\$221,461	I.	\$168,539 62.7
Denver & Rio G.	126,393	97,704	I.	28,689 29.1
Houst. & Tex. Cen.	58,388	56,910	I.	1,478 2.6
Mo., Kan. & Tex.	100,418	104,500	I.	55,918 53.3
St. L., I. M. & So.	167,900	112,734	I.	55,166 48.8
St. P., Minn. & Man.	101,000	62,000	I.	39,000 62.9
Wabash, St. L. & P.	322,481	261,394	I.	61,087 23.4
Week ending Aug. 5:	\$95,488	\$98,434	D.	\$2,946 3.0

* Deficit.

Grain Movement.

For the week ending Aug. 6 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past eight years:

Year.	Northwestern receipts.	Northwestern shipments.	Atlantic receipts.
1874.....	3,247,530	1,065,688	32,7
1875.....	3,924,504	1,125,584	785,771
1876.....	3,769,648	3,044,779	1,300,720
1877.....	4,940,613	4,285,085	950,375
1878.....	6,353,446	4,872,921	1,440,950
1879.....	6,271,648	5,588,755	1,870,352
1880.....	7,292,397	6,528,553	2,125,511
1881.....	6,932,700	4,952,203	2,113,188

The receipts of the Northwestern markets for the week this year are a sixth less than in the corresponding week of last year, and are the smallest for four years; the shipments of the markets are a quarter smaller than last year, and even the rail shipments, at half the rate, are very little larger. The Atlantic receipts are about a third less than last year and the year before, and are the smallest for four years. In these particularly we see the lack of the great winter wheat crop of the preceding three years, which was very largely marketed without reaching any Northwestern market, but swelled Atlantic receipts enormously at this time of year. Compared with previous weeks, the Northwestern receipts were a tenth less than the week before, but larger than for three weeks before that; the Northwestern shipments were a little smaller than the week before, and with three exceptions are smallest in the fourteen weeks since navigation opened. The Atlantic receipts are, without any exception, the smallest since the canal began to deliver, and about an eighth less than the week before. Besides the rail shipments from the Northwestern markets, 167,574 bushels, or 3.4 per cent., went down the Mississippi, leaving 51.9 per cent. of the whole to the lake vessels.

Of the Northwestern receipts Chicago had 51 per cent., St. Louis 18.3, Toledo 13.1, Peoria 9, Milwaukee 4, Detroit 2.4, Cleveland 2, and Duluth 0.2 per cent. Chicago's percentage is the smallest since May, but it has had an unusually large proportion of the receipts from May until now. St. Louis has large receipts again. Its receipts had averaged over a million of bushels a week until the low rail rate was made, when they fell to an average of 645,000; but now for two weeks they have been more than 1,100,000. At this time for the past few years St. Louis has received large quantities of the new winter wheat. Last year, for instance, though its May and June receipts were much less than this year, its July receipts (four weeks) were 5,540,190 bushels, against 3,071,192 this year; and last year for a time they were 1,700,000 bushels a week, against 750,000 to 1,100,000 this year. The lighter and later crop this year, and the less urgent demand for it, accounts for this. The large receipts at Chicago recently have been almost wholly of old grain, mostly of corn.

Of the Atlantic receipts during the week ending Aug. 6, New York had 53 per cent., Baltimore 19.1, Philadelphia 14.4, Montreal 6.8, Boston 4.4, New Orleans 2.1, and Port

land 0.2 per cent. Compared with the previous week, New York has a much smaller percentage of the whole, Montreal and Philadelphia much larger ones. Boston's receipts for two weeks past have been unusually light—with one exception, the lightest of the year, the cause of which is not apparent. It, Montreal, Baltimore, and even New Orleans, were receiving much larger percentages of the immensely greater total Atlantic receipts last year.

Exports from Atlantic ports for five successive weeks have been, this year and last:

	Aug. 10	Aug. 3	July 27	July 20	July 13
1881:					
Flour, bbls.	75,094	64,158	72,329	75,795	82,019
Grain, bu.	4,597,908	4,240,467	3,984,460	4,408,079	4,141,783
1880:					
Flour, bbls.	71,183	110,477	93,647	79,175	101,505
Grain, bu.	4,495,950	7,986,382	6,203,071	6,160,394	6,261,017

The enormous decrease in the exports of grain is noticeable. It is chiefly in wheat, of which in the four weeks ending Aug. 10 15,420,000 bushels were exported last year, against 7,460,000 this year. Corn exports are now rather larger than last year, though until very recently they were much less.

Receipts and shipments at Chicago and Milwaukee, for the week ending Aug. 12, have been:

	Receipts.		Shipments.	
	1881.	1880.	1881.	1880.
Chicago.....	3,618,129	3,633,474	3,068,578	3,502,102
Milwaukee.....	221,950	132,166	323,287	108,938

In the aggregate, thus the receipts of the two places are larger than the very large ones of last year, and the shipments only 5 per cent. less.

The receipts and shipments at Buffalo, the same week, were:

	Receipts.		Shipments.	
	1881.	1880.	1881.	1880.
By water.....	1,872,100	2,444,500	924,100	2,735,205
By rail.....	690,200	862,100	1,632,800	1,158,700
Total.....	2,562,300	3,306,600	2,556,900	3,893,905

Lake receipts were nearly a quarter less, and rail receipts a fifth less than last year; canal shipments were two-thirds less, and rail shipments one-half more than last year. The total shipments this year were less than the canal shipments last.

Receipts at four Eastern ports for the same week ending Aug. 12 were:

	New York.	Boston.	Philadel.	Baltimore.	The four.
1881.....	3,095,970	316,255	634,920	1,251,239	5,298,383
P. c. of total.....	58.4	6.0	12.0	23.6	100.0
1880.....	3,397,578	732,725	896,400	1,917,709	6,944,412
P. c. of total.....	48.7	10.6	13.0	27.7	100.0

Thus with a decrease of 1,616,000 bushels in the aggregate receipts of these four ports, New York has lost but 273,600 bushels, while Boston's decrease is 416,500 (more than half), and Baltimore's 686,500 bushels. Of New York receipts this year 2,119,093 bushels, or nearly 70 per cent., were by rail, while last year its rail receipts were but 1,088,676 bushels, or 32 per cent. The canal receipts were much less than half, the rail receipts nearly double those of last year.

Coal Movement.

Coal tonnages for the week ending Aug. 6 are reported as follows:

	1881.	1880.	Increase.	P. c.
Anthracite.....	546,177	409,717	136,460	33.4
Semi-bituminous.....	119,217	87,944	31,273	37.0
Bituminous, Pa.....	59,855	33,780	26,075	50.3
Coke, Pa.....	53,255			

Anthracite production is still much ahead of last year, though last week was less than the week before. There is still talk of suspending or restricting production for a time. Chicago coal receipts up to July 31 were as follows:

	—Anthracite.—		—Bituminous.—	
	1881.	1880.	1881.	1880.
By lake	227,099	218,251	108,003	100,022
By rail	293,354	192,038	1,197,700	924,070
Total	520,453	410,289	1,305,703	1,024,092

Total receipts this year, 1,826,156 tons; 1880, 1,443,261; increase, 382,895 tons, or 26.5 per cent.

Shipments this year by rail and lake were 338,413 tons, against 303,845 tons last year.

The South Pass of the Mississippi.

Washington dispatches give the following synopsis of the report to the Chief of Engineers on the progress of the work on the improvement of the South Pass of the Mississippi during the year ending June 30, 1881:

"At present there is a channel from the main river into the Gulf whose least depth is 27 ft. and least width is 160 ft. The steamer Teutonia, drawing 25 ft. of water, passed through the South Pass Feb. 4, 1881, without grounding. The bed of the Pass has in some places scoured and in others filled. During the year the fill has exceeded the scour by about one-tenth of a foot only, measured vertically. From June, 1875, to October, 1880, in a little more than five years, the average depth of fill in the Pass was 2.5 ft. As a rule, the filling has occurred most where the Pass was widest and rarely has any filling occurred in the channel where the depth was less than 27 ft. The profile chart shows much of the fill lodged in the deeper pockets of the Pass. The most interesting and important facts developed in the examinations and surveys made during the year relate to the changes that have occurred in the fan-shaped area in the Gulf of Mexico beyond the outer ends of the jetties and extending out to 100 feet depth of water.

"From June 30, 1879, to June 30, 1880, the separate surveys of this area compared with each other showed an average scour during the year of $\frac{1}{3}$ of one foot, an amount so small as to be practically nothing. But this year, June, 1880, to June, 1881, instead of a scour there has been an average deposit or fill over this large area ($1\frac{1}{2}$ square miles) of 2.38 feet.

"The report contains details of cribs, repairs and other work done on the jetties and of the wing dams built below the head of the Pass by Captain Eads to contract the waterway and procure a scour."

Chicago and Milwaukee Receipts.

Receipts and shipments at Chicago and Milwaukee for the first two weeks of August have been:

	1878.	1879.	1880.	1881.
Chicago:				
Grain, bush.....	7,050,112	6,317,200	7,363,843	7,112,227
Flour, bbls.....	67,943	87,899	112,404	223,502
Hogs, No.....	129,379	107,792	173,773	194,230
Milwaukee:				
Grain, bush.....	282,133	270,125	267,421	450,207
Flour, bbls.....	45,833	63,782	90,422	139,696
Hogs, No.....	4,900	2,809	6,868	11,911

Taking the two places together, though in grain alone there is a slight decrease from last year, in grain and flour together their receipts were equivalent to 9,196,825 bushels this year, against 8,543,981 last year, when they were larger than even before. The new crop has no effect on

these receipts, but the harvest was so far completed in July throughout the corn-growing district that the farmers have been able to give time to marketing their old grain. That it is not new grain is shown by the fact that nearly four fifths of the Chicago receipts were corn, and Milwaukee's receipts, which are always chiefly wheat, came exclusively from a country where the harvest was not completed, and generally hardly begun before August. The Chicago wheat receipts are smaller this year than in any other of the four and 30 per cent. less than last year.

THE SCRAP HEAP.

Saloon Carriages in England.

A correspondent writes as follows to the London Times upon this much discussed subject: "Having had twenty years' experience in working railways, nearly all this time being head of a department, and having observed the causes and results of many railway accidents, I may call attention to the immense advantages of the adoption of saloon carriages with end doors opening out on a platform between each carriage and a continuous centre passage through the train from end to end.

"First—The protection against outrage is so obvious as to need no remark. Ladies might safely travel without an escort almost any distance in well-constructed saloon carriages.

"Second—The strength of a saloon carriage to resist crushing endwise is immeasurably greater than of a side-door carriage. The one is a tube, with top, bottom, and sides, and girders of great strength; the other is a tube, cut from top to bottom in, say 10 places, and, therefore, destroyed for end resistance; and it is well known by all who have observed collisions and runs off that passengers in unbroken carriages are rarely much injured. I have seen 35 people wounded and 2 killed who were passengers in a weak carriage, and, therefore, broken up; at the same time, no one seriously injured in the very next carriage, which was strong and unbroken. In the latter case the force was expended in a succession of lurches and bumps; in the former in breaking up and wounding with the fragments every one in the carriage.

"Third—Side doors are a great source of danger when people attempt to enter or leave a carriage in motion; they are dragged along and thrown down at the spans between each carriage; whereas by the saloon system the carriages might be wider, so as to fit exactly to the station platforms, the end platforms between carriages being also in the same line, so as to leave no space whatever, except just clearance between the train and the station platform.

"Fourth—There would be greater comfort, freedom from the cross draughts along the floor, better ventilation, better means of warming without the inconvenience and expense of hot-water pans.

"Fifth—Economy in construction and a great saving in maintenance; it is evident that the door, with all its costly parts, continually liable to damage, is both expensive to construct and maintain in proper order. There are many more mechanical advantages of this system in the mode of coupling, buffers, draw-bars, etc., all of which could be stronger and more effectual by adopting the intermediate platform, which need not be detailed.

"The only point to be made against saloon carriages is that of want of seclusion. This can, however, be met by placing the passage not central in some carriages and forming compartments for two or four, screened off to prevent conversation being heard, but not to prevent the sounds of violence.

"It is not necessary in saloons that the seats should be along the sides; in some carriages they might be so, but it would be generally better to have them arranged at right angles to length, in seats for one or two, according to width of carriage. To widen carriages would not require wider railways, as would be the case with side footboards; these latter would be practically useless, and certainly dangerous to guards; besides, what would prevent a robber walking all along till he saw some unprotected person and then jumping in? Nothing but prejudice could lead this nation to continue so uncomfortable and dangerous a system—contrary to all mechanical and economic principles."

A Trying Situation.

"Say, mister, are we on this side of the bridge or the other?" asked a placid old lady of a gentleman on a Court street car, yesterday morning.

"We are on this side," responded the gentleman, gravely.

"Laws me! Then we ain't anywhere near Greenwood Cemetery yet?"

"Yes, madame, we are within a few squares of it."

"Sakes a massy! I thought Greenwood was on the other side of the bridge."

"No, madame; it is on this side."

"Well, that peaky conductor told me it was on the other side, when we started."

"It was, madame, on the other side then, but we have crossed the bridge."

"Then are we on the other side?"

"No, madame, we are on this side of the bridge. We've passed it."

"And is Greenwood on the other side?" she asked, starting up in some alarm.

"No, it is on this side."

"Don't try to fool me with your nonsense!" exclaimed the old lady, indignantly. "Don't try to make me think that Greenwood is on this side of the bridge when I know better, and don't try to make me believe I'm on this side of the bridge when I know I'm on the other! Don't ye do it! You want to be careful how you amuse yourself with me, or I'll fit ye out with a new set of ribs!" and the lady shook her umbrella in warning as to the source of the additional physiological development. "The idea," she continued, turning to the other passengers, "of trying to muddle an old woman that might be his mother! I'll bridge ye, both sides, in a minute. Conductor! just as soon as I get on this side of the bridge you let me out, or this will be your tombstone trip to Greenwood!"

And the dame straightened back and glared defiance, while her well-meaning informant concluded that it wasn't too warm for him to walk to his destination.—*Brooklyn Eagle.*

Baffled Train Robbers.

A dispatch of Aug. 16 from Topeka, Kan., says: "The Santa Fe passenger train that arrived here at 2 p. m. to-day brought intelligence to headquarters that a gang of train robbers had boarded the smoking car last night just after dark, at Granada, Col. They blew out the lights, and commenced going through the passengers for their money. A colored United States soldier in the car refused to give up \$500 that he had, and was shot by one of the outlaws. In turn the soldier shot one of the latter and killed him. This frightened the others, and they left without any booty."

OLD AND NEW ROADS.

Anstett & Southeastern.—This company has been organized to build a railroad from Austin, Tex., to Velasco at

the mouth of the Brazos, with a branch from Lagrange by Gonzales to St. Mary, on Aransas Bay. The capital stock is to be \$5,000,000; the road and branches will be about 300 miles long.

Baltimore & Delta.—This company having sold \$120,000 of its bonds in Baltimore, will begin work at once on the tracklaying from that city to Towson and Belair. Ties and rails have been ordered and some delivered, and contracts made for a locomotive and a number of cars.

Camden, Gloucester & Mt. Ephraim.—Surveys are being made for the extension of this road from Mt. Ephraim, N. J., to Blackwoodtown, about 12 miles. Subscriptions to the amount of \$60,000 have been secured on the line.

Chapman & Lehigh.—This company has been incorporated in Pennsylvania to build a railroad from Chapman Quarry in Northampton County, Pa., southwest to Catawqua, about 10 miles.

Chicago, St. Louis and New Orleans.—Vice-President Clarke, of this company, in a recent interview, gave the following facts regarding the condition of the road: "There is now a continuous steel track from New Orleans to Fulton, Ky., a distance of 506 miles. Only 44 miles of iron rail now remain between Cairo and this point, and steel rails will soon be substituted. In fact, the steel rails have already been purchased and are now being received. By October 1 there will be entire steel rail communication from New Orleans with Chicago, St. Louis and Dubuque. The grade of the road is now being reduced, the object being to haul larger tonnage at less expense. Ballasting is being prosecuted as speedily as possible. The section between New Orleans and Canton has already been graveled. Five new iron bridges are being built, and will be turned over by the contractors by Oct. 1. One is being constructed over Mayfield Creek, Ky.; one over the Hatchie River, Tenn.; one over the Tallahatchie River, Miss.; one over Rhode's Creek, near Terry, Miss., and one over the Hurricane River, Miss. The total length of these bridges aggregates 1,400 feet. They are calculated to carry two tons per running foot."

Cincinnati, Indianapolis, St. Louis and Chicago.—This company is building a brick round-house with 10 stalls at Kankakee, Ill. It is understood that a repair shop will be built there next spring.

Cincinnati, Wabash & Michigan.—The contract for grading and bridging and furnishing the ties for the extension of this road from Goshen, Ind., to Benton Harbor, Mich., has been let to Heustis & Co., of Crawfordsville, Ind. They are to begin work at once.

Dawson, Broadford & Mt. Pleasant.—This company has been organized to build a railroad from Dawson in Fayette County, Pa., to Porter's Gap and thence to Mt. Pleasant, a distance of 12½ miles. The proposed road is in the Connelville coke region, and the line is parallel all the way either to the Broadford & Mt. Pleasant or the South-west Pennsylvania road.

Denver & Rio Grande.—The Salt Lake (Utah) Herald says: "It is understood that the Denver & Rio Grande Railroad Company has decided to make the junction of the Castle Valley and Pleasant Valley branches of its line at Clear Creek, some 30 miles from Provo. Work is to commence on Wednesday next. This, of course, brings the Denver & Rio Grande in direct connection with Provo City by means of the Utah & Pleasant Valley. All the grading of the Denver & Rio Grande has been contracted for from the east of the Grande River, running westward until it reaches the Castle Valley grade, which goes east. It is expected to complete the connection by Christmas."

A report comes from Denver that this company has concluded an agreement with the Chicago, Burlington & Quincy for the extension of the Burlington & Missouri River road from its present terminus in Nebraska to Denver, about 200 miles. The plan as reported includes the completion of the Utah Extension to Salt Lake and Ogden, and a connection with the Central Pacific.

Georgia Railroad Legislation.—The Railroad Committee of the Georgia Legislature was occupied all last week in hearing arguments for and against a bill to repeal the law establishing the Railroad Commission. A number of persons were heard, including officers of most of the leading companies of the state.

A movement has been started for the passage of a general railroad law, under which companies may be organized to build railroads in the state. A special charter is now required.

Georgia Pacific.—This company has been fully organized in Georgia, Alabama and Mississippi, and the companies will be consolidated in one corporation as soon as the necessary legal formalities can be completed. The contract for the construction of the road has been signed, the contractor being the Richmond & Danville Extension Company. The contracting company has its capital stock of \$5,000,000 all subscribed, and has made a call for 20 per cent., to be paid in by Sept. 1 next.

Germantown, Norristown & Phoenixville.—This company has been organized to build a railroad from Germantown, Pa., to Phoenixville, about 20 miles. It will be an extension of the Pennsylvania's proposed Germantown & Chestnut Hill line.

Indiana, Illinois and Iowa.—This company, which has bought the old grade, etc., of the Plymouth, Kankakee and Pacific, is pushing work. The old grade is being repaired and completed, and the tracklayers have begun work on the section from Momence, Ill., west to Kankakee. At latest accounts the rails were down for four miles from Momence.

Lake Monroe & Orlando.—This company has bought the franchise, road-bed, right of way, etc., of the Lake Jesup, Osceola & Kissimmee River Railroad & Navigation Company, whose line extends from Lake Jesup, Fla., to the head waters of the Kissimmee River, and has been graded from Tuskawilla, on Lake Jesup, to Orlando. By the union of the two lines, the northern terminus of the road will be Lake Monroe instead of Lake Jesup.

Lake Superior & Atlantic.—A dispatch from Montreal, Aug. 15, says: "Another important railway enterprise has been taken in hand here by Canadian and American capitalists. It is the building of a line, for which they have obtained a charter from the Dominion government, from some point in the Canadian territory on the Atlantic coast or Bay of Fundy, by way of Lake Megantic, Sherbrooke, Montreal, Ottawa and French River, to a point on the east side of Lake Superior, receiving aid from municipalities in Canada and the state of Maine. The company is empowered to build a telegraph the entire length of the road, and to own and operate steamers in connection with the line, and acquire existing lines of railway by purchase, amalgamation or lease. The capital is \$10,000,000, with power to increase by vote of shareholders. The following are among the promoters: Duncan McIntire, Pacific railway

syndicate; Mr. H. Gault, M. P.; Andrew Robertson, President Montreal Harbor Board; Hon. G. G. Stevens, Hon. A. H. Gilmour, Hon. L. Church and Hon. J. R. Thibaudau. The majority of the above gentlemen belong in this city. A meeting of shareholders has been called for Aug. 30, to organize and commence surveys.

Lebanon Springs.—The towns along the line of this road in New York, all of which held bonds of this road, have recently sold them at about 20 cents on the dollar to an agent, who is said to represent Mr. Samuel J. Tilden. It is reported that a branch or connection will be built from Lebanon Springs to the Housatonic road at Canaan, Conn.

Little Rock, Mississippi River & Texas.—A contract for grading the extension of the Ouachita Division from Monticello, Ark., to Warren, 40 miles, has been let to McCarthy & Homan, the work to be done this year.

Long Island.—This company has made offers of compromise and settlement to the bondholders of the leased New York & Rockaway and the Smithtown & Port Jefferson roads. The company offers are to be considered at meetings of the bondholders, to be held in New York, Aug. 25.

Memphis, Paducah & Northern.—The Louisville Courier-Journal says: "The Memphis, Paducah & Northern Railroad was, under foreclosure decrees, sold, on July 30, in New York, to Mr. C. P. Huntington and associates, and the sale was confirmed by the United States Courts at Louisville and Memphis. The New York organization to complete and operate the road will be formed within a few days, and will be known as the Chesapeake, Ohio & Southwestern Railroad Company, which company will immediately buy the Paducah & Elizabethtown road, and as fast as can be done, the gap between Covington and Trimbull, Tenn., will be completed and the connection between Elizabethtown and Lexington, Ky., so as to place the Chesapeake & Ohio, with its Lexington & Big Sandy line, in connection with this Chesapeake, Ohio & Southwestern road. "The work on these gaps will be undertaken at once and vigorously prosecuted to completion. * * * Mr. C. P. Huntington, of the Chesapeake & Ohio and Central Pacific roads, will be the President of this new company."

Morgan's Louisiana & Texas.—Track is now laid on the North Branch to Holmesville, La., which is eight miles north of the late terminus at Garland and 52 miles from the main line at Vermilionville. The grading is done to Cheneyville, seven miles further, and track will be laid as soon as the bridge over Bayou Bouf is finished. At Cheneyville the road will cross the New Orleans Pacific.

Mt. Sterling Coal.—This road, which extends from Mt. Sterling, Ky., to Cornwell's, 20 miles, was recently sold to Mr. Zimmerman, of Cincinnati. It is a local road, built to reach some coal mines. It is reported that the purchase was in the Chesapeake & Ohio interest, and that the road will be extended to Pound Gap.

Nashville, Chattanooga & St. Louis.—This company makes the following statement for the month of July:

Gross earnings	\$150,430.84
Working expenses (67 per cent.)	99,804.57
Net earnings	\$50,626.27
Interest and taxes	40,559.78
Surplus	\$10,066.49

July is the first month of the company's fiscal year.

New Bonds.—New issues of bonds have been placed or are offered on the market as follows:

The St. Paul & Duluth new first-mortgage bonds, \$1,000,000 in amount, were awarded to Cutting & Brown, of New York, at about 101½ and interest.

Lehigh & Hudson River bonds are offered by Sheldon & Wadsworth, of New York; amount of issue not stated. They are first-mortgage, 6 per cent. bonds having 30 years to run. The company is building a line from Belvidere, N. J., to McAfee Valley, 41 miles; it has lately bought, and will use as part of the main line, the branch of the Sussex road from Hamburg Junction to McAfee Valley, 3½ miles.

Pensacola & Atlantic first-mortgage 6 per cent. bonds, guaranteed by the Louisville & Nashville Company, are offered to Louisville & Nashville stockholders of record Aug. 25, at 95 and interest, each purchaser to receive a bonus in stock. The Louisville & Nashville Company retains three-fourths of the stock. The authorized issue of bonds is \$3,000,000. The road is to extend from Pensacola, Fla., eastward to the Chattahoochee River, about 185 miles.

New Orleans Pacific.—The tracklayers on the western end have now reached Mansfield, La., 34 miles south by east from Shreveport, and are advancing steadily. Work is also progressing from Alexandria northwest, and the two ends of the track are expected to meet at Natchitoches early in October. From Alexandria southeast track is laid 15 miles, and connection will be made with the Morgan road at Cheneyville by Sept. 1.

New York Central & Hudson River.—This company has bought in Buffalo a large tract of land owned by the Townsend estate, which has an extensive frontage on the harbor and canal, and has on it a large warehouse building. The purchase also includes the Buffalo Erie Basin Railroad, a short spur which connects the property with the Central track. The company is said to have paid \$150,000 for the property.

New York, Lake Erie & Western.—This company makes the following statement for the nine months of its fiscal year, from Oct. 1 to June 30:

	1880-81.	1879-80.	Increase.	P. c.
Gross earnings	\$15,421,430	\$13,718,842	\$1,702,588	12.4
Expenses	9,893,517	8,643,282	1,250,235	14.4
Net earnings	\$5,527,913	\$5,075,560	\$452,353	9.0

Preparations are being made to change the gauge of the Northern (New Jersey) road and the Piermont Branch from 6 ft. to standard gauge.

New York, West Shore & Buffalo.—A contract for the grading of this road from Newburg, N. Y., along the Hudson to Milton, about 12 miles, including three tunnels at the Danskammer, has been let to Peter Ward, James Mackin and Valentine L. Lary, forming the firm of Ward, Mackin & Co. This section includes some of the heaviest work on the road.

New Zealand.—This company has been fully organized and has decided to begin work at once on the road, of which a preliminary survey has been made. It will run from the Boston, Concord & Montreal near Fabyan, N. H., up the New Zealand River, 12 miles. Its principal object is to reach a large tract of valuable timber land.

Northern Pacific.—Track is now laid to Spokane Falls, Wash. Ter., three miles beyond the late terminus at Hangman Creek, and 150 miles from the Columbia River at Ainsworth, the starting point of the Pend d'Oreille Division. The grading of the division is finished to Pend d'Oreille,

67 miles further, and tracklaying is in progress beyond Spokane Falls.

Ohio & Mississippi.—Receiver King's report to the Court for July is as follows:

Balance, July 1	\$182,385.30
Receipts from all sources	389,865.44
Total	\$572,250.74
Vouchers prior to Nov. 1878	\$973.78
Vouchers, etc., subsequent to Nov. 1878	542,179.26
	543,153.02

Balance, Aug. 1.....\$50,097.72
The disbursements exceeded the receipts by \$153,287.58 for the month.

Olympia & Tenino.—The stockholders of this road have voted to change the name to Olympia, Tenino & Chehalis Valley; also to extend the road as soon as arrangements can be made. It is now in operation from Olympia, Wash. Ter., to Tenino, 15½ miles.

Pittsburgh, Cincinnati & St. Louis.—This company has reduced the local rates of fare on the Columbus, Chicago & Indiana Central Road to 3 cents per mile, except for very short distances. This is a reduction of from 12½ to 25 per cent on the old rates.

The same reduction has also been made on the Jeffersonville, Madison & Indianapolis and the Indianapolis & Vincennes roads.

Pittsburgh & Western.—The trouble with the stockholders of the old Pittsburgh, New Castle & Lake Erie Company is about to be reopened in the courts of Allegheny and Butler counties, Pa., by the filing of a bill in equity on the part of the old stockholders for the repayment of the money which they invested in the old stock. The road was sold by the Sheriff about two years ago for \$5,500 in satisfaction of a judgment for \$5,020, the purchasers organizing the present company, and the claim is now made that the sale was fraudulent and does not take away the rights of the original stockholders.

Rochester & Southern.—This company has filed articles of incorporation to build a railroad from Rochester, N. Y., south to Livonia, about 30 miles. The line is parallel to the Rochester Division of the Erie.

Richmond & Allegheny.—A dispatch from Richmond, Va., Aug. 15, says: "Notice was filed in the Chancery Court of this city to-day by George B. Harrison and others, stockholders of the Richmond & Allegheny Railroad Company, that application would be made for an injunction and restraining order to prevent the amalgamation or consolidation of the said company with the Atlantic & Northwestern and the Ohio Central railroad companies, and to prevent the said railroad companies and the syndicate committee thereof from issuing or recording any mortgage or lien upon the property and franchises of the Richmond & Allegheny Railroad Company, under any other name whatsoever, other than the amount authorized by the charter."

Roswell.—The grading of this road is now all completed from the Atlanta & Charlotte Air Line at Doraville, Ga., 15 miles from Atlanta, north by west to Roswell, 10 miles. The rails are laid from Doraville to Dunwoody, seven miles. The work has been delayed by the failure of the rails to arrive as fast as promised. The road will be worked as a branch of the Air Line.

South Branch & Forest.—This company has been incorporated to build a railroad from the Philadelphia & Erie at Sheffield, Pa., up the South Branch of Tionesta to Brookston, a distance of 10 miles.

Southern Pacific.—A dispatch from San Francisco, Aug. 12, says: "Charles Crocker, President of the Southern Pacific Railway, said to a Bulletin reporter yesterday that the company were laying a mile of track every day beyond El Paso. They are grading from the other end of the road, and have the road graded for 125 miles and 60 miles of track laid westward from San Antonio. When this work is finished, it will give the Southern Pacific a line through to within a few miles of Galveston, Tex., and 100 miles of New Orleans, where connection will probably be made with the Morgan road."

"Mr. Crocker thought that the plan of the consolidation of the Atchison & Topeka and the Texas & Pacific companies, recently telegraphed, was possible but not probable. If the plan were really to be carried out, the Southern Pacific and the Central Pacific are prepared for such a contingency, and expect to have, in that event, an eastern connection a long time before the completion of such a road into California. In answer to a question if he referred to the Palmer narrow-gauge or to the Denver & Rio Grande Railroad, Mr. Crocker said:

"That would be a pretty good outlet, and probably sufficient; but in case of such a combination as that referred to, we will have an outlet of our own. We now have an engineering party in the field surveying the line from Corinne, through the South Pass, by way of the Hams Fork coal fields, thence down the Sweetwater to the North Fork of the Platte, thence following down the Platte for about 100 miles and crossing over to the headwaters of Niobrara River, and thence to Yankton, Dakota. We expect to build a line through that country for about one-third of what the Union Pacific cost."

Mr. Crocker's reported reply above, however, does not provide any substitute for the Atchison, Topeka & Santa Fe, but only one for the Union Pacific, which will be in no degree affected by the consolidation mentioned.

South Ferry & Sea Side Direct Transit.—A company by this name has filed maps and plans of a new route to run underground from South Ferry, Brooklyn, up Atlantic avenue to a point between Third and Fourth avenues, thence through the city below the grade of the streets in a southeasterly direction to near Fort Hamilton, thence through Bath and across Sheephead and Jamaica Bays to Barren Island, to connect there with a ferry to Rockaway Beach. A branch to Coney Island is also contemplated. Among persons connected with the enterprise are L. M. Brown, William Redmond, Oliver Fisk, Henry J. Cullen, Jr., Philip Allen, James B. Toler and C. A. Grimes.

South Pacific Coast.—It is again reported that this road has been sold to the Atlantic & Pacific Company. The road extends from Alameda, Cal., on the east side of the bay, opposite San Francisco, to Santa Cruz.

Spokane Falls & Columbia River.—This company has been organized to build a railroad from Spokane Falls, Wash. Ter., by the Colville Valley to the Columbia River, at or near Kettle Falls, a distance of 76 miles; also a line from Spokane Falls to the Columbia just below the mouth of the Spokane River, about 50 miles. The company also intends to build and run steamboats on the Upper Columbia above Kettle Falls and on the Kootnai River and Flat Bow Lake.

Texas Trunk.—The track on this road is now laid to Kaufman, Tex., 35 miles east by south from the starting

point at Dallas. Regular trains between Dallas and Kaufman will be put on shortly.

Utah & Northern.—The right of way has been secured for this road through the Ft. Hall reservation in Montana, from the Bannock and Shoshone Indians.

Valley of Virginia.—At a special meeting in Staunton, Va., Aug. 11, it was resolved by the stockholders to approve the issue of \$1,000,000 new bonds for the purpose of completing the road. It was also resolved to begin work at once on the extension from Staunton to Lexington. Part of the grading on this extension was done several years ago.

Wabash, St. Louis & Pacific.—The new Detroit line was opened for business Aug. 14. For the present only two trains daily will be run over it, as there is still a good deal of work to do in building sidings and stations.

ANNUAL REPORTS.

The following is an index to the reports of companies which have been reviewed in previous numbers of this volume of the Railroad Gazette:

Page.	Page.
Alabama Great Southern.....	Manchester & Lawrence.....
Atchafalaya & Chehalis.....	Marietta & Cincinnati.....
Atlanta & Charlotte Air Line.....	Michigan Central.....
Baltimore & Hanover.....	Midland of New Jersey.....
Baltimore & Potomac.....	Mill, Lake Shore & Western.....
Boston, Concord & Montreal.....	Missouri, Kansas & Texas.....
Boston, Housatonic & West.....	Missouri Pacific.....
Boston & Lowell.....	Mobile & Girard.....
Burr, Cedar Rapids & No. 105.....	Mobile & Ohio.....
Calo & St. Louis.....	Montpelier & Wells River.....
Canada Southern.....	Morris & Essex.....
Canadian Railroads.....	Nashua & Lowell.....
Castro & N. Y. Valley.....	Nashville, Chattanooga & St. L.....
Carolina Central.....	Nevada County.....
Central Iowa.....	New Haven & Northampton.....
Central of New Jersey.....	N. Y., N. H. & Hartford.....
Charlotte, Col. & Augusta.....	N. Y., Pennsylvania & O., 176, 181
Chicago & Alton.....	N. Y. State Roads, 28, 44, 60, 106, 182
Chl., Burlington & Quincy.....	Norfolk & Western.....
Chl., Rock Island & Pac.....	Northeastern (S. C.).....
Chl., Hamilton & Dayton.....	Northern Central.....
Cin., Richmond & Ft. Wayne.....	Northern (New Hampshire).....
Cincinnati Southern.....	Ogdensburg & Lake Champlain.....
Cin., Wabash & Michigan.....	Ohio & Mississippi.....
Cleve. Col. & Ind.....	Paducah & Elizabethtown.....
Col. & Rocking Valley.....	Panama.....
Columbus & Toledo.....	Pennsylvania Company.....
Consolidated Coal Co.....	Pennsylvania & New York.....
Dayton & Union.....	Pennsylvania Railroad.....
Delaware.....	Pensacola & Florida.....
Del. & Hudson River.....	Philadelphia & Reading.....
Delaware & Hudson Canal.....	Phila. W. & Baltimore.....
Del., Lack. & Western.....	Pitts. & Castle Shannon.....
Delaware Western.....	Pitts., Cin. & St. Louis.....
Denver & Rio Grande.....	Pitts., Fort Wayne & Chicago.....
Eastern R. R. Association.....	Pitts. & Lake Erie.....
Eureka & Palisade.....	Pitts., Titusville & Buffalo.....
Fitchburg.....	Portland & Ogdensburg.....
Gal. Har. & San Antonio.....	Portland & Rochester.....
Georgia R. R. & Banking Co.....	Port Royal & Augusta.....
Grand Trunk.....	Prince Edward Island.....
Great Western of Canada.....	Providence & Worcester.....
Hannibal & St. Joseph.....	Fullman Southern Car Co.....
Housatonic.....	Richmond & Danville.....
Houston & Texas Central.....	Richmond, Fred. & Potomac.....
Indianapolis & Vincennes.....	Rome, W. town, & Ogdensburg.....
Indiana, Bloom. & West.....	Rutland.....
Intercolonial.....	St. Johns & Lake Champlain.....
Jett., Madison & Indianapolis.....	St. Louis Bridge Co.....
Kentucky Central.....	St. Louis, Iron Mt. & Southern.....
Knox & Lincoln.....	St. Louis & San Francisco.....
Lake Shore & Mich. R.....	Sandy River.....
Lehigh Coal & Nav. Co.....	South Carolina.....
Lehigh Valley.....	Southern Pacific.....
Ligonier Valley.....	Terre Haute & Indianapolis.....
Little Rock & Fort Smith.....	Troy & Boston.....
Long Island & Northern.....	Troy & Greenfield.....
Louisville & Nashville.....	Union Pacific.....
Louisville, New Albany & Chi. 104	Utah Southern.....
Maine Central.....	Utica & Black River.....
	Virginia & Truckee.....
	Wabash, St. L. & Pac. 27, 104, 176
	Wilmington & Northern.....
	Wisconsin Central.....
	Worcester & Nashua.....

Savannah, Florida & Western.

This company acquired the Atlantic & Gulf road at foreclosure sale near the close of 1879, and its first statement is for the year 1880. The road worked during that year was the line from Savannah, Ga., to Bainbridge, 237 miles; an extension to the wharves in Savannah, 2 miles; the Junction Branch, a connection with the Charleston & Savannah, 4 miles; the Florida Division, from Dupont, Ga., to Live Oak, Fla., 49 miles, and the Albany Division, from Thomasville, Ga., to Albany, 59 miles, making 351 miles in all.

Since the close of the year the company has, under the charters of the Waycross & Florida and the East Florida companies, completed a line from Waycross, Ga., to Jacksonville, Fla., 71 miles, making its total mileage 422 miles. The equipment consists of 26 engines; 24 passenger and 21 baggage, mail and express cars; 192 box, 11 stock and 131 flat cars; 62 service cars.

The general account is as follows:

Stock	\$2,000,000.00
Funded debt	2,705,100.00
Bills and accounts payable	548,780.28
Profit and loss	50,000.04
Total	\$5,303,940.92
Cost of road	\$4,851,194.85
Materials on hand	56,596.23
Current accounts	308,170.36
Cash	27,979.51
	5,303,940.92

The bonded debt is that subject to which the road was sold; it consists of \$1,666,000 Atlantic & Gulf consolidated first-mortgage bonds; \$336,000 Savannah, Albany & Gulf bonds; \$864,000 South Georgia & Florida bonds, and \$39,100 Junction Branch bonds. Only the consolidated bonds are secured on the whole road. The interest charge is \$189,748 yearly.

The traffic of the road was as follows:

Train miles, passenger	272,831
freight	459,210
Total	732,050
Passengers carried	109,855
Passenger-miles	7,728,402
Tons freight moved	306,589
Ton-miles	33,862,813

Average train load:
Passengers, number.....28.33
Freight, tons.....73.74

The train-mileage was equivalent to about 5.7 trips over the entire length of the road each day of the year.

The earnings for the year were as follows:

Passage	\$202,300.04
Freight	836,307.80
Mails	35,261.71
Miscellaneous	120,789.41
Total (\$3,403.61 per mile)	\$1,194,657.96
Expenses (69.44 per cent.)	829,587.20
Net earnings (\$1,040.12 per mile)	\$365,080.76

No comparisons can be made, as no report has been made for this road since it was put in the hands of receivers in 1877. The mileage is substantially the same now as then,

the Jacksonville Branch not having been completed or open for business during the year covered by the report.

Payments from net earnings were as follows:

Net earnings, as above	\$365,080.78
Interest on funded debt	\$186,849.36
Dividend, 7 per cent.	140,000.00
Other payments	10,000.00
	336,849.36

Balance to surplus.....\$28,231.40

The new line to Jacksonville enables the company to carry the all-rail business to Florida entirely over its own line; giving it, however, still 17 miles shorter haul than over the old line to Live Oak, the distance between Savannah and Jacksonville being, by this line, 99 miles less than by the old circuitous route. There will also be a considerable advantage to the company in controlling both ends of the all-rail line, and being able to direct the entire working of the line without interference.

Chicago & Northwestern.

The report of this company for the year ending May 31, 1881, gives the following statement of mileage worked at the close of the year:

	Miles.
Wisconsin Div., Chicago to Ft. Howard and branches.....	329.23
Galena Div., Chicago to East Clinton and branches.....	313.14
Iowa Div., East Clinton to Council Bluffs and branches.....	496.01
Madison Div., Belvidere to Winona.....	83.39
Peninsula Div., Ft. Howard to Lake Angelina Mine and branches.....	274.55
Milwaukee Div., Chicago to Milwaukee.....	85.00
Winona & St. Peter, Winona to Lake Kampeska and branches.....	452.50
Dakota Central, State Line to Pierre.....	209.11
Iowa Midland, Lyons to Anamosa and branch.....	70.37
N. W. Union Div., Milwaukee to Fond du Lac.....	62.63
Toledo & N. W., Tama to Webster City.....	63.39
Iowa Ry., Coal & Mfg. Co. road.....	3.25
Milwaukee & Madison Div.....	92.88
Sheboygan & Western Div.....	78.40

Total.....2,778.06

The mileage reported a year before was 2,512.77 miles, to which 8.61 miles were added by correction of measurements, making 2,521.38 miles. The 261.56 miles added during the year were 152.40 miles of the Dakota Central; 71.99 miles of the Toledo & Northwestern; 27.94 miles on the Menominee River Branch of the Peninsula Division; 6.10 miles of the Rock River road, making 258.43 miles of new road built, and 3.25 miles bought with the property of the Iowa Railway, Coal & Manufacturing Company. On all the lines there are 1,766.18 miles laid with steel.

Of the above roads 483.81 miles are leased; 987.63 miles owned through the medium of proprietary companies (of which this company owns all the stock), and 1,306.62 miles are owned directly.

The equipment at the close of the last two years was as follows:

	1881.	1880.	Inc. or Dec.
Locomotives.....	476	425	I. 51
Passenger cars, first class.....	178	167	I. 11
second class.....	29	29	
Parlor and dining cars.....	7	3	I. 4
Baggage, express and mail cars.....	113	98	I. 15
Box cars.....	9,530	7,090	I. 2,440
Stock cars.....	1,430	942	I. 488
Platform and coal cars.....	2,149	1,690	I. 459
Iron ore cars.....	2,957	2,960	D. 3
Caboose cars.....	172	173	D. 1
Paymasters' and officers' cars.....	4	4	
Boarding cars.....	18	18	
Pile-driver and wrecking cars.....	15	15	
Dump and ditching cars.....	65	65	

The Land Department reports 2,050,917 acres of land unsold, and 284,117 acres under contracts of sale, but not yet deeded to purchasers. Sales during the year were 192,317 acres and 751 town-lots for \$646,907.56; 13 lots and plots were given away for schools, churches and public buildings. Total land receipts were, from cash sales and advance payments, \$398,369.29; installments on time sales, \$148,638.47; interest on contracts, \$36,678.44; stumpage, trespass, etc., \$7,308.45; total, \$590,994.65. Of the lands unsold 197,112 acres are reported subject to litigation.

The general account, condensed, is as follows:

Common stock (less \$21,667.60 owned by Co.).....	\$15,083,488.37
Preferred stock (less \$557,561.84 owned by Co.).....	21,650,782.72
Total Chi. & N. W. stock.....	\$36,744,271.09
Winona & St. Peter.....	\$2,300,000
Chi., Mil. & N. W.....	8,690,000
Menominee River.....	216,000
Iowa Midland.....	50,000
Toledo & N. W.....	6,800,000
Iowa Ry., Coal & Mfg. Co.....	60,000
Iowa Northwestern.....	1,500,000
Elgin & State Line.....	1,080,900
Stanwood & Tipton.....	250
Dakota Central.....	12,500
Rock River.....	3,750
Escanaba & Lake Superior.....	6,250
Western Town Lot Co.....	25,000
Consolidation Coal Co.....	500,000
	21,244,650.00
Total stock accounts.....	\$57,988,921.09
Funded debt (including proprietary roads).....	57,006,000.00
Redemption of bonds.....	363,000.00
Sinking funds paid.....	1,117,000.00
Consolidated bonds unsold.....	530,000.00
Bills, accounts, pay-rolls for May.....	2,529,390.33
Accounts and balances, including interest, etc., not yet due.....	1,850,257.73
Immature payments on real estate.....	482,766.30
Land income.....	303,046.28
Income account, surplus.....	7,533,987.51
Total.....	\$129,704,369.24
Road and property, including proprietary roads.....	\$122,431,583.57
Trustees of sinking funds.....	1,117,000.00
General assets, bonds on hand, stock, etc.....	1,433,235.00
Des Moines & Minneapolis account.....	363,806.63
Materials.....	1,255,096.36
Accounts and balances receivable.....	1,125,779.78
Cash.....	1,677,864.90

The accounts have been somewhat changed in form by consolidations and changes among the proprietary roads, and by including the proprietary companies in the general balance sheet, as more fully explained below.

Changes in stock were trifling, including only 110 shares for conversion of bonds, and a few shares for old fractional scrip. During the year there were issued \$11,000 consolidated bonds for old bonds taken up; \$3,915,000 bonds on extensions of proprietary lines; \$1,528,000 Chicago & Tomah guaranteed bonds, and \$1,600,000 Milwaukee & Madison bonds, a total of \$7,054,000, and \$183,000 bonds were retired, leaving a total increase of \$6,871,000 in the bonded debt. The interest charge on the bonded debt, as it stood at the close of the year, is \$3,899,390 a year.

The statements in this report include the proprietary lines, for which some figures have heretofore been given separately. The figures given below for earnings, traffic, etc., are for all the lines worked, the average length being 2,644.16 miles in 1880-81, and 2,515.83 miles in 1879-80.

The income account may be summed up as follows,

Gross earnings for the year.....	\$19,334,072.05
Working expenses.....	\$6,970,618.86
Taxes.....	446,201.39
Interest on bonds.....	3,647,897.45
Rent of leased roads.....	1,384,731.75
Sinking fund account.....	98,120.00
	15,556,570.25

Surplus for the year.....\$3,777,501.80

Balance, May 31, 1880.....	\$5,988,059.75
Adjustment sinking fund coupon acc't.....	188,698.71
	6,176,758.46

Total.....\$9,954,260.26

Dividends.....2,420,272.75

Balance of income, May 31, 1881.....\$7,533,987.51

The dividends paid were 7 per cent. on the preferred stock in regular quarterly payments; 3 per cent. on common stock in June, 1881, and 3 per cent. on common stock in December, 1880, from the surplus of the preceding year.

The earnings and expenses of the road in detail were as follows:

	1880-81.	1879-80.	Inc. or Dec.	P. c.
First-class passengers.....	\$3,186,466.33	\$2,869,351.31	\$317,115.02	11.05
Second-class passengers.....	450,966.64	455,775.95	24,314.69	5.38
Excursion passengers.....	179,168.96	179,168.96		
Commutation.....	278,012.57	235,047.33	43,965.24	18.71
Freight.....	14,304,482.45	12,890,520.30	1,413,962.15	11.76
Milk.....	107,668.64	97,267.22	10,401.42	10.71
Express.....	310,233.24	285,782.96	24,450.28	8.56
United States mail.....	297,380.02	292,001.74	5,378.28	1.81
Extra baggage.....	28,301.32	25,749.99	2,551.33	9.95
Miscellaneous.....	125,976.57	101,631.58	24,344.99	19.87
Total.....	\$19,394,072.05	\$17,349,340.04	\$1,944,732.01	11.41
Expenses.....				
Repairs of engines and tenders.....	\$630,831.74	\$488,064.67	\$142,767.07	20.25
Repairs of cars.....	708,617.03	688,104.81	20,512.22	2.97
Repairs of bridges and crossings.....	100,014.71	100,065.68	50.97	0.05
Repairs of tracks, etc.....	447,574.18	415,607.55	31,966.63	7.69
Repairs of tools and machinery.....	155,453.74	114,516.40	40,937.34	35.69
Fuel used by locomotives.....	1,173,763.90	893,565.56	280,198.34	31.50
Fuel and lights used in cars and at stations.....	137,124.81	86,909.08	50,215.73	57.72
Oil, waste and tailow.....	119,863.58	85,350.08	34,513.50	40.64
Office and station furniture and expenses.....	78,892.10	60,307.40	18,584.70	30.81
Furniture and fixtures for cars.....	23,650.38	16,988.10	6,662.28	39.31
Foreign agents.....	63,906.77	67,934.79	4,028.02	6.29
Advertising.....	54,549.08	40,077.15	14,471.93	36.18
Stationery, printed blanks, checks, etc.....	67,687.60	56,200.95	11,486.65	20.35
Engineers, firemen and wipers.....	1,044,942.45	858,817.08	191,125.37	22.38
Conductors, baggage men and brakemen.....	643,246.44	554,587.31	88,659.13	16.88
Laborers and switchmen at stations.....	986,722.18	764,109.02	222,613.16	29.14
Agents and clerks at stations.....	873,402.79	761,371.92	112,030.87	14.74
Superintendence.....	108,908.05	92,934.63	15,973.42	17.17
Rents.....	26,700.12	26,962.86	262.74	0.98
Loss and damage.....	65,444.00	35,900.99	29,543.01	44.90
Injury to persons.....	92,977.11	38,766.38	54,210.73	56.07
Teaming freight, baggage and mails.....	5,867.21	3,544.95	2,322.26	65.49
Miscellaneous exp.....	66,726.04	67,564.77	838.73	1.24
Car hire paid over amount received.....	81,568.38	32,169.11	49,399.27	60.45
Operating exp.....	\$9,079,610.63	\$8,049,356.43	\$1,030,254.20	12.91
Taxes.....	446,201.39	369,241.34	76,960.05	17.24
Operating expenses and taxes.....	\$10,425,821.05	\$8,418,597.82	\$1,997,223.23	23.70
Net earnings.....	\$8,968,250.00	\$8,917,742.22	\$50,507.78	0.57
Gross earn. per mile.....	7,311.99	7,229.73	82.26	1.13
Net earnings per mile.....	3,698.08	3,641.56	56.52	1.55
Per cent. working expenses.....	51.62	46.40	5.22	10.13
Per cent. expenses and taxes.....	58.92	48.60	10.32	17.52

The following table shows the average mileage for the year and the earnings and net earning per mile worked for six years:

Year ending May 31.	Miles operated.	Earnings per mile.	Net earnings per mile.
1876.....	1,992.08	\$7,034.72	\$2,881.13
1877.....	1,993.28	6,538.52	2,762.78
1878.....	2,036.93	7,241.63	3,500.39
1879.....	2,129.37	6,847.53	3,227.84
1880.....	2,215.83	7,829.73	4,024.56
1881.....	2,644.16	7,311.99	3,698.08

Average for six years.....\$7,134.02 \$3,294.28

The decrease of earnings per mile is sufficiently explained by the increase of mileage, most of it in a new country.

The report says: Included in the item of freight earnings is the sum of \$205,469.50, received for the transportation of materials used in the construction of the various lines, as belonging to the original cost of their respective properties. As the rate charged (half a cent per ton per mile) was less than the average cost of moving freight, this necessary service tended to restrict the earnings and diminish the net profits of the company, by diverting equipment which otherwise would have been profitably employed in general transportation.

The train movement on all the lines was as follows:

	1880-81.	1879-80.	Inc. or Dec.	P. c.
Train miles.....	3,354,170	3,008,912	345,258	11.6
Passenger.....	7,424,118	6,539,164	884,954	13.5
Service.....	313,359	281,782	31,577	11.2
Switching.....	3,209,507	2,541,808	667,699	26.3
Total.....	15,301,154	12,769,566	2,531,588	19.8
Car miles.....				
Passenger.....	16,222,237	14,359,731	1,862,506	13.0
Freight.....	152,347,391			
Average cars per train.....				
Passenger.....	4.94	4.78	0.16	3.3
Freight.....	20.52			
Av. train load.....				
Passenger, No.....	48.99	46.60	2.39	5.1
Freight, tons.....	132.07	132.42	0.35	0.3

The average earnings per mile for passenger trains were 146 cents; for freight (including switching) trains, 136 cents; average for all trains, 138.00 cents; average cost per train mile, 74.53 cents; net earnings per train mile, 63.47 cents. The average distance run by each passenger train was 115.54 miles; by each freight train, 253.96 miles. The average passenger journey was 36.66 miles; average freight haul, 147.17 miles. The cost of locomotive service per mile run was 19.25 cents, against 17.79 cents the preceding year.

The traffic for the year was as follows:

	1880-81.	1879-80.	Inc. or Dec.	P. c.
Passengers carried.....	4,482,317	3,964,798	517,519	13.1
Passenger miles.....	164,333,508	140,116,884	24,216,624	17.3
Tons freight moved.....	6,662,112	5,574,635	1,087,477	19.5
Ton-miles.....	980,522,774	865,906,542	114,616,232	13.2
Av. receipts.....				
Per passenger per mile.....	2.53 cts.	2.67 cts.	0.14 ct.	5.2
Per ton per mile.....	1.47 "	1.49 "	0.02 "	1.3

CONSOLIDATIONS.

President Keep's report says: "With a view of diminishing

the number of corporations and separate organizations included in the system of railroads controlled and operated by this company, an effort was made during the past year to bring together, capitalize and merge under authority of law the various properties situated in each state, so far as the same could conveniently be effected, independently of the organization of the Chicago & Northwestern Railway Company. In pursuance of this policy the following companies have been consolidated during the year and before the issue of this report:

"The Elgin & State Line Railroad Company the St. Charles Railroad Company, and the State Line & Union Railroad Company in the states of Illinois and Wisconsin, were consolidated under the name of the Elgin & State Line Railroad Company.

"The Chicago & Milwaukee Railway Company, the Northwestern Union Railway Company, the Milwaukee & Madison Railway Company, the Chicago & Tomah Railroad Company (which had previously been merged with the Galena & Wisconsin Railroad Company), and the Sheboygan & Western Railway Company, were consolidated in the states of Illinois and Wisconsin, under the name of the Chicago, Milwaukee & Northwestern Railway Company.

"The Menominee River Railroad Company in Michigan, and the Menominee Railway Company in Wisconsin, were consolidated under the name of the Menominee River Railroad Company in both of said states.

"The Winona & St. Peter Railroad Company (which had previously purchased the property and franchises of the branch known as the Winona, Mankato & New Ulm Railroad), the Plainview Railroad Company, the Chatfield Railroad Company, the Rochester & Northern Minnesota Railroad Company, the Minnesota Valley Railway Company and the Chicago & Dakota Railway Company, have been united in Minnesota, and form the existing corporation of the Winona & St. Peter Railroad Company.

"The result of this work has been to combine the eighteen distinct organizations into four separate companies, mostly situated in the four states of Illinois, Wisconsin, Michigan and Minnesota.

"As a further result, these changes have required a rearrangement and corresponding consolidation of accounts on the books of the successor companies, but as all their earnings, expenses, fixed charges and liabilities—together with those of the other proprietary lines—are assumed by the Chicago & Northwestern Railway Company, they will hereafter be included in its general operations, and are so included in this report."

There were used in renewals 17,614 tons of steel rails, 100 tons of iron rails and 689,725 new ties; 21,704 rails were repaired and relaid. A large number of improvements and renewals in bridges and buildings were made on the various lines.

ADDITIONS TO PROPERTY.

President Keep's report says: "The following expenditures have been incurred in providing additional facilities during the year, viz.: for account of new passenger depot in Chicago, nearly completed at the close of the year, \$304,201.91; for new ore docks, Nos. 2 and 3, on Peninsula Division, \$80,423.89; for new station buildings, eating houses, water stations, engine houses, coal houses, docks, station elevators and other station structures and improvements at various points on the line, \$94,444.25; for right of way and depot grounds, \$1,169.09; for new fencing, \$6,851.23; permanent bridging, \$230,393.52; for Sangamon street Viaduct, Chicago, \$4,198.24; new shops at Chicago, \$247.35; for extension of tracks to Appleton Water Power Extension, to Montrose, and tracks to various iron mines, \$9,919.84; for 19.45 miles new side tracks, \$227,332.57; and for account of Menominee River Railroad, \$142,947.27, amounting in the aggregate to \$1,002,129.16, less \$112,986.81 credits; making total net construction as above, \$889,142.35.

"On the Winona & St. Peter Railroad there was expended for new side tracks, buildings, permanent bridging, right of way, fencing, etc., the sum of \$99,077.42, and on the Iowa Midland Railway, in Iowa, for new side tracks, buildings and permanent bridging, \$3,552.69.

"Included, also, in construction expenditures are the following items, to wit: the valuable working coal mines and properties of the Consolidation Coal Company in Iowa; the road and mines of the Iowa Railway Coal & Manufacturing Company; and the purchase of sundry station lots and grounds acquired for the development of the new roads.

"The Consolidation Coal Company represents about seventeen hundred acres of the best coal lands in Iowa, on which three distinct mining properties are well opened, amply equipped and capable of producing large quantities of excellent coal. Situated at Muchachinock, Mahaska County, Ia., some 60 miles south of the line of this company's railroad, they are reached by the road of the Iowa Central Railway Company, with which favorable arrangements have been made for hauling the coal to a connection with our Iowa Division.

"The importance of this purchase may be readily seen from the statistics of this report, which show an aggregate consumption of 507,786 tons of coal, at an expenditure of \$1,196,330.08 during the year; an amount far in excess of the cost of this valuable property.

"A branch line, called the Iowa & Southwestern Railway, extending southwesterly from Carroll, Carroll County, Ia., to Harlan, with a fork to Audubon, was projected and partially surveyed last year. This line of about 56 miles in length is now being constructed and will furnish additional business to the main line for 395 miles to Chicago.

"The discoveries of valuable beds of iron ore, which are now being worked in the Pelch Mountain District, on the Peninsula of Michigan, have led to the survey and construction of about 36 miles of new road to connect with the Escanaba line; and an extension is also being constructed in a northerly direction for about 22 miles, from the end of the Menominee River Railroad, at Florence, for the accommodation of iron mines opened up in